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FRUITS AND FARINACEA THE PROPER FOOD OF MAN;

BEING AN ATTEMPT TO PROVE FROM HISTORY, ANATOMY, PHYSIOLOGY, AND CHEMISTRY, THAT THE ORIGINAL, NATURAL, AND BEST DIET OF MAN IS DERIVED FROM THE VEGETABLE KINGDOM.

BY JOHN SMITH,

MALTON, YORKSHIRE.

"Few persons will read from end to end, as we have done, without receiving impressions that must tend to frequent reflection. We can recommend the volume as equally curious and useful."—*Athenæum.*

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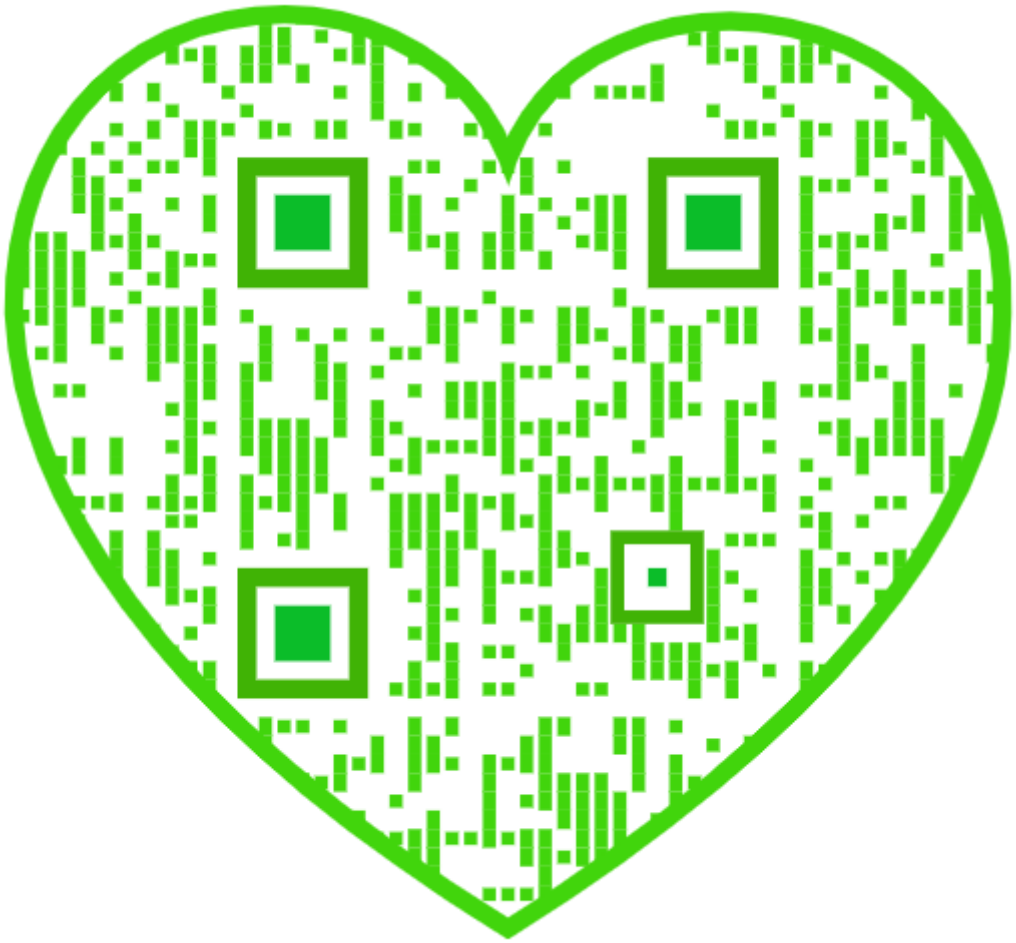

THE PRINCIPLES AND PRACTICE OF VEGETARIAN COOKERY.

THE

PRINCIPLES AND PRACTICE

OF

VEGETARIAN COOKERY,

FOUNDED ON CHEMICAL ANALYSIS, AND
EMBRACING THE MOST APPROVED METHODS OF THE ART.

BY THE AUTHOR OF

"FRUITS AND FARINACEA THE PROPER FOOD OF MAN."

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Dedicated to the Memory

OF

JAMES SIMPSON, ESQ.,

LATE PRESIDENT OF THE VEGETARIAN SOCIETY.

HIS PUBLIC SERVICES AND PRIVATE VIRTUES ENDEARED HIM TO ALL WHO KNEW HIM;

HIS LABOURS FOR THE GOOD OF MANKIND WERE ENERGETIC AND INCESSANT;

HIS EARNEST WISHES WERE NOT ONLY TO SPEND BUT TO BE SPENT IN DOING GOOD,

AND IN WIDELY PROMULGATING WHATEVER HE RECOGNIZED AS TRUTH.

VEGETARIANS WILL LONG LAMENT THE IRREPARABLE LOSS THEY EXPERIENCED IN THE EARLY DEATH OF SO GREAT A BENEFACTOR AND FRIEND.

This Little Work

WAS UNDERTAKEN AT HIS REQUEST, AND IS NOW PUBLISHED IN RESPECTFUL REMEMBRANCE OF HIS ZEAL AND TRUTHFULNESS.

MALTON, *April 17th*, 1860.

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INTRODUCTION.

In pursuance of the command, "Be fruitful, and multiply, and replenish the earth, and subdue it," mankind are rapidly extending their dominion over the whole habitable portion of the globe; they are denizens of every climate, and both land and ocean supply them with a dwelling place. Their food must, consequently, be of a very varied character, and much of it would be unpalatable and indigestible without some artificial preparation. Hence has arisen the art of cookery, which has been carried to such excess by complicated processes, high seasoning, and heterogeneous compounds, as often to render the food injurious rather than wholesome. Instead of adhering to the simple diet of nature as closely as climate, the engagements of civic and social life, and other circumstances would permit, man seems to have been contriving how he could depart the furthest from it. We should, however, rather regard his present habits as the gradual and cumulative result of circumstances, before science and rational inquiry had any influence in directing them.

The more highly flavoured and the more stimulating man renders his food for the purpose of pampering a vitiated palate, the greater variety and the more frequent changes will he require to avoid disgust; whereas the simpler and more natural his diet, the more enjoyment and the sounder health will he possess.

All substances requiring the culinary art to develop or modify their nutritive properties, should be prepared with as strict a regard to organization and the physiological laws as possible. Each organ employed in the process of digestion has its peculiar function, and its integrity is best maintained, not by immunity

from labour, but by regular exercise, with alternate periods of rest. If we attempt by artificial means to render the legitimate exercise of any organ unnecessary, we shall certainly impair or weaken its function; and this observation is as applicable to the internal organs as to the external limbs. No alimentary substance, therefore, should be cooked to such excess as to leave the organs little or nothing to do. Any article softened or diluted to such a degree as to render mastication unnecessary is injurious to the teeth; and the admixture of the saliva with the food, so essential to the digestion of all farinaceous substances, will, in a great measure, be prevented. Aliments thus prepared should, at any rate, be used sparingly, or along with other substances of greater consistency.

All food in a hot state, whether solid or liquid, should be carefully avoided, as it acts injuriously on the teeth, debilitates the stomach, and, through it, every other organ and portion of the animal system. Heat stimulates the nerves of taste, but, like most other stimulants, it weakens their power of appreciating the delicate flavours of the best and most wholesome articles of food, and renders our gustatory enjoyment much less complete.

In culinary preparations we should not aim to concentrate too highly the nutritive qualities of food, for this would certainly prove injurious. In all food nature has combined nutritious with innutritious matter, and we frequently err by using art to separate the one from the other, as their union is generally necessary to good digestion and perfect nutrition.

Improper combinations of different kinds of food, and too great a variety at one time, should be avoided; for it is impossible that the human organs should digest equally well substances of an entirely different nature, when taken together. An almost endless variety of food adapted to the organization of man has been provided for him, but not for the purpose of intimate mixture, or of being used at the same time; simplicity of food at each meal being essential to his highest well-being. Great simplicity, however, is consistent with endless variety, if a periodical routine of two or three well-selected dishes for each day be adopted.

It is intended in this work to show how great a variety, and what numerous changes of palatable and nutritious preparations,

may be made without using the flesh of animals; and I doubt not that a simple and judicious combination of fruits with farinaceous, saccharine, oleaginous, mucilaginous, and other vegetable productions, would, after the habit had been well and carefully formed, be most productive of health and enjoyment; but as many may object to a total surrender of eggs, milk, cream, butter, and cheese, this work would have been incomplete unless it had shown how these articles may be employed in moderation to enrich the purely vegetable preparations. The union of the two may be regarded as an intermediate or transition diet, till the chemistry of food is better understood, or until the best and pleasantest combinations of fruits and farinacea have been ascertained. These combinations should vary according to climate, constitution, and other circumstances; they should unite high nutritive value and digestibility with real sensual enjoyment, and be well adapted to man's progressive development as a physical, intellectual, and moral being.

The flesh and blood of animals are entirely excluded from all preparations contained in this work, being considered unnecessary, unnatural, and frequently injurious to man. The slaughter of highly organized and sentient beings is productive of much misery to the animal creation, repulsive to our natural sympathies, demoralizing in its effects upon human character, and not the best adapted to our digestive organs. High seasonings should be either altogether rejected, or used with caution; it is better that they should keep their place as medicines, and be used only when states of the system denoting a deviation from health require them.

To meet in some measure the prevailing habits and customs of society, many receipts have been introduced which a less sophisticated taste will condemn as too rich, and consequently prejudicial; but in all such cases it is an easy matter to diminish the quantity of the objectionable articles, or to substitute plainer preparations. Many of the combinations in this work are intended for those persons who wish to make a trial of Vegetarian diet, rather than for those who have already adopted it, and to whom simpler fare will be much more acceptable. Food well and plainly cooked, and thoroughly masticated,

will, when the stomach and other alimentary organs are in order, be easily digested, and excessive alimentation, the fruitful source of many painful and fatal diseases, will thus be avoided.

"The grand desideratum is to ascertain how far the various circumstances in which man is placed, and the quality of the aliment on which he is obliged," (or may choose) "to subsist, render this evil" (cooking) "necessary; or to what extent the artificial preparation of food can be carried without causing a greater evil than it prevents."

All operations in cookery should be conducted with the greatest possible attention to cleanliness, neatness, elegance, and economy. The food of man as provided by nature is agreeable to the senses of sight, smell, and taste, and all artificial preparations should be calculated to produce similar results. An elegant taste, however, will be more rationally employed in rendering a plain, wholesome, and nutritious dish inviting, than in embellishing trifles, custards, and other rich productions, which are more likely to create indigestion than to satisfy a natural appetite.

PRINCIPLES AND PRACTICE

OF

VEGETARIAN COOKERY.

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1. The objects of Cookery are: 1st. By means of moisture and heat, variously applied, to render any nutritive substance more agreeable to the palate; to expel from it any principle which would be injurious to the animal economy; to reduce any strong fibrous structure; and to bring it to a proper consistency for the teeth and digestive organs. 2nd. To point out the best known means of mingling, combining, and otherwise preparing various articles of diet so as to render the compound pleasing to the eye, agreeable to the taste, suitable to the stomach, and nutritive to the system. 3rd. To describe the most successful methods of preserving and storing perishable nutritive substances.

Before instructions upon these subjects can be duly appreciated and well understood, a certain amount of information is requisite respecting the chemical elements, and alimentary principles, of the articles used in Vegetarian diet, as well as respecting the processes employed in cookery.

Some readers may consider such introductory matter unnecessary, and too scientific for a work of this kind; but Cookery is in reality a branch of chemistry, and a knowledge of the principles of any art is usually essential to success in its practice. The causes of failure in any particular preparation may then be frequently detected, and avoided in future; a little knowledge of this kind will also suggest new mixtures and processes. Those, however, who are unwilling to attend to these preliminaries can pass them over; they will find ample directions for all requisite preparations in the various divisions of the work.

THE CHEMICAL ELEMENTS OF FOOD.

2. There are about nineteen chemical elements found in organized bodies used as food; the principal are carbon, hydrogen, oxygen, nitrogen, phosphorus, sulphur, iron, chlorine, sodium, calcium, magnesium, and potassium. A very brief description of these elements is all that is necessary.

CARBON. — This is an essential constituent of all organized bodies, and forms from 30 to 50 per cent. of most substances used as food, and nearly 80 per cent of oil, butter, and animal fat, when these substances have been deprived of the water they contain. An adult, taking moderate exercise, is said to require thirteen ounces of carbon daily in his food, but when little or no exercise is taken, about nine ounces is found sufficient. Much however, depends upon the temperature of the atmosphere; a larger supply of carbon and hydrogen being required in cold weather for the production of animal heat. The carbon of the food combines with the oxygen of the atmosphere received by the lungs, forming carbonic acid, which is exhaled from the lungs, and sustaining animal heat.

HYDROGEN. — This gas is also an essential element both of animal and vegetable structures. It abounds in alcohol, oil, malic acid, and the azotized principles, alcohol containing the most. Its combination with oxygen in the animal economy produces water, and at the same time heat is given off.

OXYGEN.—This gas is a necessary ingredient of food. It is in excess of hydrogen in the pectine of fruit, and in citric and tartaric acids.

Fats contain .	120	equivalents of carbon to		10	equivalents of oxygen.	
Azotized principles	120	,,	,,	36	,,	,,
Starch . .	120	,,	,,	100	,,	,,
Gum and Cane Sugar	120	,,	,,	110	,,	,,
Grape Sugar .	120	,,	,,	140	,,	,,

Those foods which contain a small proportion of oxygen consume, during the changes they undergo in the animal system, a greater amount of atmospheric oxygen than those which possess a larger quantity of this element; hence more atmospheric oxygen is required under an animal diet than under a vegetable diet.

The experience of Dr. FYFE and Mr. SPALDING are in accordance with these views. and Dr. CRAIGIE infers "that the sustenance of the frame by means of animal diet causes a more violent and laborious action of the lungs than the sustenance of the same frame by means of vegetable diet. Hence, persons living on animal food breathe laboriously, and are less capable of fatigue."*

Hence, also, the advantage of a fruit and farinaceous diet in phthisis, because it is of a milder and less stimulating nature than an animal or mixed diet, and the lungs have much less labour to perform.†

About eight-ninths of the oxygen inhaled combines with carbon, the remaining one-ninth unites with other combustible matters, principally hydrogen.

NITROGEN OR AZOTE.—This gas is an essential element of every animal tissue, and of most vegetable products. Fat, oils, sugar, starch, etc., when pure, are devoid of it. Azotised principles contain about 16 per cent. of this element; rice 1·39 per cent.; wheat, rye, etc., 2 to 3 per cent.; peas and beans 4 to 5·5 per cent. Atmospheric air consists of about one-fifth oxygen and four-fifths nitrogen, and it is *more than probable* that when food is deficient in nitrogen, this important element is absorbed from the atmosphere.

Nearly one-half of the weight of vegetable productions consist, of carbon, and rather more than one-third of oxygen; the hydrogen amounts to about 5 per cent., and the nitrogen varies from 1 to 4 per cent.

PHOSPHORUS.—This is a constituent both of animals and vegetables. It is an essential ingredient of albumen and fibrine, and consequently of all tissues containing these principles. It is found in grain, particularly in the bran, in the yolk of eggs, milk, potatoes, etc. Peas, beans, and lentils contain very little of this element, and to this deficiency some persons ascribe their inferiority to the cerealia for feeding purposes, although, as above stated, they contain more nitrogen than wheat, barley, etc.

* *Elements of the Practice of Physic*, vol. ii, p. 643.

† See *Fruits and Farinacea the Proper Food of Man*, p. 159 and 225.

SULPHUR.—This is a constituent both of animals and vegetables. It is found in albumen, fibrine, and caseine. The discoloration of a silver spoon by eggs depends upon the formation of sulphuret of silver. Sulphur is found in corn, almonds, nuts, peas, beans, cauliflowers, cabbages, asparagus, turnips, potatoes, etc.

IRON.—A constituent of most, if not all, organized beings. It is found in yolk of egg, milk, peas, potatoes, cabbage, and most vegetables, used as food. LIEBIG says, "Vegetable food, especially grain, and of course bread, contain as much iron as beef or red meat generally."

CHLORINE.—This element is taken into the system in the form of chloride of sodium or common salt, which contains 60 per cent. of it.

SODIUM.—This metal exists in the blood and the animal tissues. Common salt contains 40 per cent. of it.

CALCIUM.—This is also a metal which forms a part of animal and vegetable structures. It exists in the cereal grains, onions, garlic, most other vegetables, eggs, and milk.

MAGNESIUM.—This is found in the cereal grains, potatoes, milk, eggs, etc.

POTASSIUM.—A constituent both of animal and vegetable products. It is found in grapes, potatoes, and most inland plants.

ALIMENTARY PRINCIPLES.

3. Two or more of the simple elements in combination form alimentary or proximate principles, called also simple aliments; these again, by their union with each other, constitute our ordinary foods, whether animal or vegetable, termed compound aliments.

Alimentary principles are divided into two classes, the Non-azotized, or those which in a pure state contain no nitrogen, and the Azotized, or such as contain this element.

(1.) THE NON-AZOTIZED CLASS.

4. This division contains the aqueous, saccharine, amylaceous, mucilaginous, pectinaceous, acidulous, alcoholic, and oleaginous principles.

(*a.*) *The Aqueous Alimentary Principle.*

A very large proportion of the human body is aqueous. The blood contains about 80 per cent., the flesh about 74 per cent. of water. It is not improbable that water is decomposed in the animal system, and that its elements, oxygen and hydrogen, assist in the formation of organized tissues. It also combines chemically with certain substances, and converts them into others, as starch into sugar of milk. It is probable also that by its aid uric acid is changed into urea. Water, therefore, is an important agent both in health and disease. A draught of water an hour or two after a meal assists the solution and absorption of the contents of the stomach. Water increases the interstitial metamorphosis of tissue, and consequently favours the loss of weight; but the metamorphosis of tissue is *life*, or an inseparable part of life, and there is reason to believe that where it goes on quickly, and there is the possibility of a supply of new matter equal to the exhaustion of the old, the tissue changed is in a more perfect state, and more able to resist external noxious influences.

The effect of water on the secretions is determined by the circumstances under which it is taken. If taken when a person is inactive and exposed to cold, it acts as a diuretic; if in bed, while surrounded with warm blankets, as a diaphoretic; if followed by steady and gentle exercise, as a purgative.

Water is said to have as many degrees of hardness as each gallon contains grains of chalk. It is found by experiment that one gallon (weighing 70,000 grains) of *pure* water will not dissolve more than two grains of chalk, by which it would acquire two degrees of hardness. Whenever more than two grains is contained in a gallon of water, the excess is owing to the presence of carbonic acid gas, which enables it to dissolve a much larger quantity. The carbonic acid gas may be in part expelled from water by heating the latter to the boiling point. Nearly the whole disappears at the end of half an hour's boiling, and the chalk is deposited. Soft water may, therefore, be obtained by boiling hard water during several hours before it is required. Or add as much powdered oxalate of ammonia as will lie on a sixpence to a kettle of boiling water; this salt is preferable to subcarbonate of soda when

it is at hand. The oxalic acid unites with the lime, whatever may be its combination in the water, and forms an insoluble salt (oxalate of lime), which falls to the bottom, while the ammonia of the oxalate of ammonia is driven off by the heat of the water. Soft or distilled water is the best for infusions, solutions, and decoctions. It boils sooner than hard water, and extracts more effectually the aroma of tea and other vegetable substances. The tannin, gum, albumen, and volatile oil, on which last the flavour of the tea depends, are all capable of uniting with the salts which cause the hardness of the water, and of forming with them either insoluble or peculiar compounds as regards flavour. In either case they diminish the colour and taste of the infusion, and delay the process of tea-making. The same remarks apply to coffee, soup, etc.

When the object is to cook the food, so as to preserve the juices as much as possible in the substances cooked, hard water is preferable, and for this purpose salt is also added. Soft water without salt is too powerful a solvent for green vegetables; it makes them too tender, destroying that firmness essential to the preservation of their juices, which are thus dissolved and extracted, and the vegetables, consequently, rendered insipid. The green colour is also abstracted, and the vegetables are rendered pale, and even yellowish.

Sea salt in small quantities, a solution of less than twenty grains to two ounces of water, or about an ounce to a quart, *favours* decomposition, and *softens* animal and vegetable fibres, especially if a little heat be added; a strong solution, on the contrary, *hardens* the fibres, and *preserves* them from decomposition. Sea water contains between twenty-five and twenty-six grains in two ounces.

(*b.*) *The Saccharine Alimentary Principle.*

5. This includes several kinds of sugar quite distinct in character, but it will not be necessary to notice more than three, viz., cane-sugar, grape-sugar or glucose, and sugar of milk. One or other of these is found both in vegetables and animals, particularly the former.

Cane-Sugar.—This is obtained from the sugar-cane, beet-root, the maple-tree, and some other plants. It crystallizes with great facility, either in small grains by the rapid cooling of a strong syrup, or in large distinct crystals by a slower process, as in sugar-candy. It dissolves in one-third its weight of cold water, and to any extent in hot water. A solution saturated in the cold has a viscous consistence, and is called syrup. A solution saturated at 230° forms on cooling a mass composed of small cohering crystals. If kept long at a temperature near the boiling point, the syrup loses the power of crystallizing. Syrup boils at 221°.

Cane-sugar melts between 302° and 356° into a viscid, colourless liquid, which on cooling forms a transparent, amorphous, mass called barley-sugar. At about 420° sugar is converted into a brown, tasteless mass called *caramel.*

Tartaric, oxalic, citric, malic, kinic, dilute sulphuric, and acetic acids, convert cane-sugar into grape-sugar, which unites with the acids, and forms a compound no longer crystallizable. Heat facilitates the change into grape-sugar, and the addition of alkalies cannot remove the acid nor restore to the sugar the power of crystallizing.

When boiled with alkalies, cane-sugar is first changed into grape-sugar, and then into formic acid, and two new acids, the *glucic acid* and the *melassic acid.*

Sugar is an antiseptic, that is, it prevents the decomposition or putrefaction of organic substances. A much smaller quantity of it than of salt is required to accomplish this purpose. It acts by excluding the air, or by combining with the oxygen of the air, or by absorbing moisture, or in one or more of these ways. In some instances, perhaps, its efficacy may be of another kind, as when it promotes the solidification of vegetable jelly.

The common brown sugar contains many impurities, as vegetable fibre, the sporules of the sugar fungus, the acarus sacchari or sugar mite, in great abundance, etc. Therefore, when a pure sugar is required, the crystallized kinds should be preferred.

Grape-Sugar, called also *starch-sugar*, and *glucose*, contains less carbon than cane-sugar, it is also less soluble, and not so sweet. Grape-sugar may be extracted from *dried grapes* or

honey; it is also prepared on the large scale from starch. The sugar obtained by evaporating the sweet juices of plants which have an acid reaction will not crystallize, in consequence of small quantities of the organic acids uniting with the sugar, as already remarked.

Glucose crystallizes with two atoms of water in wart-like masses, consisting of minute plates arranged in a cauliflower-form, as is sometimes found in long-kept currant-jelly, and other preserves. It is white, devoid of odour, and not so sweet as cane-sugar, but sweeter than milk-sugar; it is only half as soluble in water as cane-sugar, but more soluble than milk-sugar. At a few degrees below 100° it begins to cake together, but it melts perfectly at 100° with the loss of its two atoms of water; at 140° it becomes converted into caramel, and develops a sweetish odour.

In contact with nitrogenous bodies, and especially with caseine, it undergoes the lactic, and subsequently the butyric fermentation; and with common yeast it passes into the state of vinous fermentation.

Molasses or treacle, formed during the process of refining cane-sugar, contains grape-sugar; it also contains the products of the decomposition of sugar by alkalies. *Glucic* and *melassic* acids are also found in treacle.

Honey collected from the nectaries of flowers by the working bees, is a mixture of cane and grape sugar.

Sugar of Milk.—Milk generally contains about 5 per cent. of sugar, but the milk of carnivorous animals contains none. When milk is exposed to a temperature of from 90° to 104°, it undergoes the vinous fermentation. During the process, sugar disappears, alcohol is formed in the liquid, and carbonic acid is disengaged. It is probable, however, that before fermenting, the sugar of milk is converted into grape-sugar, for the fermentation does not begin till the milk has curdled, that is, till an acid has been formed, and this acid may be the cause of the conversion of the sugar of milk into grape-sugar.

Sugar is exceedingly nutritious; it imparts fulness to the pulse, a higher colour to the skin, and force and vigour to the human frame. It is an aliment proper for children, old people, convalescents, and persons suffering from debility; it is also very efficacious in inci-

pient consumption, and in many nervous diseases. In some dyspeptic individuals, it is apt to give rise to flatulency and preternatural acidity of the stomach; but it is readily digested by the healthy stomach, and exercises on the organs no irritating or debilitating influence. This is probably the reason why persons who have fed on saccharine aliments have lived to a great age, and enjoyed good health to a late period of life. "The vigour which this alimentary principle imparts to all the organs, insures the perfection of the functions of life, and at the same time renders existence sweet and tranquil. After each repast, the body does not experience the trouble, intestine agitation, and febrile excitement which spiced meats, wine, coffee, etc., always promote." *

During the sugar season of the West India Islands "every negro on the plantations, and every animal, even the dogs, grow fat." †

"The injurious effects which have been ascribed to sugar are more imaginary than real, for some individuals have consumed large quantities of it for a long series of years, without suffering any ill consequences. We are told that Henry, Duke of Beaufort, who died about 1702, ate nearly a pound of sugar daily for forty years. He died of fever in the seventieth year of his age; he was never troubled with a cough, his teeth were firm, and all his viscera were found, after death, quite sound." "The fondness of children for saccharine substances may be regarded as a natural instinct; since nature, by placing it in milk, evidently intended it to form a part of their nourishment during the first period of their existence. Instead, therefore, of repressing this appetite for sugar, it ought rather to be gratified in moderation. The popular notion of its having a tendency to injure the teeth is totally unfounded." ‡

"I have had little patients," observes Dr. CHAMBERS, "affected with strumous derangement of digestion, increase in weight to the extent of from two and a-half to four pounds in the first week after commencing the use of an additional four ounces of

* BARBIERE in *Dictionnaire des Sciences Medicales.*
† DR. WRIGHT, *Medical Plants of Jamaica.*
‡ Dr. PEREIRA's *Treatise on Food and Diet*, p. 114.

sugar to the daily diet; this quantity, however, is larger than is necessary or desirable." *

The result of observations made on the excretions during the use of sugar by Dr. Böcker, shows that it restricts the waste of the body, by decomposition, more than any other known substance, and that its effects are most marked on the products of the destruction of bone; hence its value where there is a tendency to disease of the osseous system, to rickets, or softened bones. The lactic acid formed from sugar dissolves phosphate of lime, and this is the principal ingredient of bones and teeth. By its dissolution it becomes accessible to the bones and teeth, and as sugar effects this, its utility is apparent.

Persons who are predisposed to plethora, apoplexy, or any inflammatory affection, should not indulge in it.

Honey resembles sugar in its alimentary properties, and is rather laxative. When taken in excess, it is apt, particularly in persons of delicate digestive organs, to induce flatulency, spasmodic pains in the bowels, and diarrhœa.

(*c.*) *The Amylaceous Alimentary Principle.*

(*Farinaceous or Starchy Substances.*)

6. *Starch*, or fecula, is a very important compound, consisting of small grains of various shapes, and is very abundant in the vegetable kingdom. It is found in lichens, ferns, roots, stems, tubers, fruits, and seeds, especially wheat, barley, rye, oats, maize, and rice.

In leguminous seeds, as peas and beans, starch is associated with a small portion of fatty oil, and in emulsives with a large portion of oil, which may be separated by pressure, as in linseed. The grains of *Tous-les-mois* are largest, and those of potato starch are next in size; those of the leguminosæ are very small, and those of wheat and rice the smallest.

When substances containing starch are minutely divided or reduced to a powder, and agitated in cold water, the starch is washed out and deposited at the bottom of the vessel. It is insoluble in cold water, alcohol, or ether.

* *Digestion and Its Derangements*, by Thomas K. Chambers, M.D.

In water, between 160° and 180°, it forms an imperfect solution; in boiling water it forms a stiff jelly; and if this be exposed in a thin layer to a dry atmosphere it becomes a translucent mass, which swells into a jelly again with water like gum tragacanth. Starch may also be dissolved by diluted acids. When boiled so long that iodine ceases to colour it, starch is converted into a substance called *dextrine*, which is soluble in cold water. By boiling still longer, the dextrine is changed into grape-sugar.

Amylaceous aliments generally are converted by the saliva into dextrine and glucose; the latter is changed by the bile into fatty matter, and the pancreatic fluid is supposed to convert the fatty or oleaginous products into chyle.

Starch in all forms contains about 0·25 per cent. of nitrogen, which JAQUELAIN considers essential to it.

HUFELAND and others have highly commended an amylaceous diet in phthisis, commonly called consumption, and in febrile and inflammatory diseases. It is very nutritive, communicating no tartness when pure, and is easily digested; but as starch swells much in solution, it should always be cooked, in order to break or split the grains, before it is eaten; otherwise it may cause great distention of the stomach, and pass off without being digested.

LIEBIG endeavours to show that by the conversion of starch or sugar into fat, oxygen is supplied to the system; and that by the union of this disengaged oxygen with carbon (from the bile, for example) heat is developed.

1 equiv. of Starch .	$C_{12}H_{10}O_{10}$	1 equiv. of Fat .	$C_{11}H_{10}O$
		1 equiv. of Carbonic Acid C	O_2
		7 equiv. of Oxygen	O_7
			$C_{12}H_{10}O_{10}$

"Thus," says he, "in the formation of fat, the vital force possesses a means of counteracting a deficiency in the supply of oxygen, and consequently in that of the heat indispensable for the vital process."

Dextrine.—Starch may be converted into the substance called dextrine by roasting, by long boiling, by treating it with *diastase*,* which is analogous to gluten, and is found in malted barley; by diluted acids at a boiling temperature; by an infusion of malt at 150°; and by the saliva. Dextrine exists in the sap of most plants, it is soluble in water, and may be precipitated by alcohol. In analysis it is usually called gum, from which it differs very little, for if gum be exposed to the air and separated from the water by drying, it becomes similar to, if not identical with, dextrine.

(*d.*) *The Mucilaginous or Gummy Alimentary Principles.*

7. The term gum was formerly given to almost all exudations from plants. It is now limited to certain rather abundant substances, which are solid, uncrystallizable, transparent, or translucent, tasteless, soluble in water, or at least softening in it, and insoluble in alcohol, ether, fat, and volatile oils. They may be divided into gums which dissolve in cold water (arabine, mucilage), and gums which only swell up to a jelly (tragacanth or bassorine, cerasine, pectine).

Arabine, or gum arabic, is found as an exudation from several species of acacia. Gum Senegal is essentially the same. It is very soluble in cold water, and forms a viscid mucilage, from which alcohol precipitates the gum. When a mixture of gum, water, and sulphuric acid is kept for some time at a temperature near boiling, it is converted into grape-sugar. Gum is usually considered to possess nutritive properties, but it is apt to disagree with dyspeptics.

Mucilage is the name given to a substance resembling gum; it occurs in various parts of plants and abounds in certain seeds, as linseed. It differs from arabine in being less hard when dry, and less transparent; it is slippery, but cannot be drawn into threads like gum. All mucilages contain much mineral matter, and it is probable that their peculiar qualities depend on the presence of

* According to LIEBIG *pepsine* and *diastase* are nothing more than a portion of mucous membrane, or of gluten which has passed into a state of decomposition.

phosphate of lime, or other salts of lime, disguising either starch or arabine. When linseed is soaked in cold water, the mucilage expands and escapes from the seed. It is insoluble in water, but swells when immersed in it, and contracts again under the action of alcohol. Like gum, it forms an emulsion with oils, but is distinguished from the former by containing a large quantity of nitrogen. When boiled in dilute sulphuric acid, mucilage is changed into sugar.

The mucilage of linseed contains 52·7 per cent. of soluble gum, 29·89 insoluble, and 7·27 per cent. of nitrogen.

The vegetable substances in which mucilage prevails are carrots, parsnips, turnips, beet, asparagus, scorzonera, salsafy, Jerusalem artichokes, artichokes, lettuce, spinach, cabbages, cauliflowers, green peas, green kidney-beans, leeks, onions, etc.; also barley, wheat, and all the grains used for brewing and baking. Mucilaginous articles are in general easy of digestion, contain little nutriment, and have an emolient action.

Bassorine forms the chief part of gum tragacanth, and of gum bassora, and according to some, of salep; but SCHMIDT says the latter is really formed of swelled-up grains of starch. Bassorine resembles arabine in appearance, but is less transparent, and instead of dissolving in cold water, only swells up to a very great extent, forming a viscid mass.

Cerasine is the name given to that part of the gum of the cherry, plum, or almond trees which is insoluble in cold water. It is probably identical with bassorine, or with salep.

(*e.*) *The Pectinaceous Alimentary Principle.*

(*Vegetable Jelly.*)

8. *Pectine* or *pectic acid*, from πηκτὸς, a coagulum, is a principle which, when dried, resembles gum or isinglass, and forms a jelly with water. Most pulpy fruits contain vegetable jelly, as currants (red, white, and black), apples, pears, quinces, plums, apricots, gooseberries, blackberries, raspberries, strawberries, bilberries, cherries, oranges, etc. It may also be obtained from Jerusalem artichokes, the onion, carrot, turnip, beet, etc. The

pectic acid in turnips and carrots amounts respectively to 2 and 5 per cent.

When the juice of fruits is carefully evaporated at a temperature of 200°, the concentrated portion of it concretes into a tremulous gelatinous mass, quite distinct from animal gelatine and from gluten, as it contains no nitrogen. It is very analogous to gum with vegetable acid, and if, when gelatinized, it be put into a sieve, the acid gradually filters through, and by washing with cold water it may be separated, leaving the jelly pure, which will dry into a hard mass not very different from gum.

Sugar or alcohol promotes the solidification of both pectine and pectic acid, and the addition of a very small quantity of a fixed alkali, as potash, converts pectine into pectic acid, which is not soluble in cold water like the former. When the quantity of sugar added is not sufficient to absorb all the watery parts of the fruit, caution is necessary in evaporating the moisture, for by long boiling the mixture often loses the property of gelatinizing, and the jelly is spoiled. This is caused either by the coagulation of the vegetable albumen (13) destined to form the jelly, or by the conversion of the pectine or pectic acid into metapeptic acid, which is very soluble in water, and incapable of forming a jelly. An impure aqueous solution of pectine gelatinizes by keeping, the pectine being changed by the vegetable albumen into pectic acid. It contains less hydrogen and more oxygen than starch. Pectine and pectic acid are known from experience to be of the greatest importance as food, but it is not known why they are so, nor what change they undergo during the process of digestion.

"When pectine is heated with a small quantity of potassa or soda, or of their carbonates, it is converted into what has been termed *pectic acid*. This acid is easily obtained by the action of alkalies on the ligneous tissue of some vegetables; it combines with bases, and may be again separated from them by other acids. The *alkaline pectates* are soluble, but the pectate of lime is insoluble."—BRANDE.

Pectic acid may be obtained thus:—Wash rasped carrots well with distilled water, then boil 50 parts of the squeezed residue with 300 parts of water and one of potash. The pectate of potash is deposited as a jelly in the filtered liquid on cooling. Either

this salt or the pectate of lime may be decomposed by diluted hydrochloric acid; the pectic acid is left as a jelly, which dries up into transparent laminæ, insoluble in water, but very soluble in alkalies. From these solutions acids precipitate it as a jelly. In this form it is slightly soluble in boiling water, but the solution gelatinizes on the addition of acids, salts, alcohol, or sugar. It is supposed not to exist ready formed in the plants, but to be produced by the action of alkalies on pectine.

Carrageenin.—This mucilaginous or vegeto-gelatinous substance is contained in *chondrus crispus*, and other allied seaweeds, which are sold in the shops under the name of carrageen, pearl, or Irish moss. It is nearly allied to pectine, and, like it, contains an excess of oxygen.

Carrageen moss is extensively used, partly as a domestic remedy, and partly as a nutritive substance. It contains about 79 per cent. of carrageenin and 10 of mucus.

The jelly is obtained by first steeping the moss in cold water for a few minutes, and then boiling it in water or milk. The sprigs of moss should be carefully picked and well shaken after it has been steeped. From ½ oz. to 1½ oz. of moss will be sufficient for a quart of milk (44) (396).

(*f.*) *The Acidulous Alimentary Principle.*

9. This principle is found chiefly in cherries, peaches, oranges, lemons, strawberries, raspberries, apples, pears, and other fruit, and in succulent vegetables. Though the vegetable acids contain little nutriment, they are of great importance to health, and should be freely used; they rouse the appetite, excite the digestive powers, and are employed with success in scorbutic, rheumatic, and other atonic and chronic complaints.

(*g.*) *The Alcoholic Alimentary Principle.*

10. Though alcohol evolves heat by its hydrogen uniting with oxygen in the human system, "it is an obnoxious fuel. Its volatility, and the facility with which it permeates membranes and tissues, enable it to be rapidly absorbed; and when it gets into the blood, it exerts a most injurious operation, before it is burnt

in the lungs, on the brain and the liver; and, under ordinary circumstances, there are other better, safer, and less injurious combustibles to be burned in the vital lamp."—Dr. PEREIRA.

Whether alcohol in some shape, and in small quantities, may be necessary in cases of debility or disease, is for the medical practitioner to determine; under ordinary circumstances it is certainly not required, and in cookery it may be dispensed with altogether. It is, however, frequently recommended for sauces, etc.

Alcohol diminishes not only the absolute quantity of carbonic acid exhaled by the lungs, but also the relative proportion of it in the products of respiration. Professor SCHULTZ says "Its action on the blood is not chemical but vital; it contracts the vesicles, by which they are deprived of colouring matter, and hurried on to the last stage of development or death; and as the activity of the respiratory process depends upon the vital activity of the vesicles, less oxygen will be absorbed, and less carbonic acid excreted, in proportion as the vesicles are devitalized; and this is the true explanation of the venous character peculiar to the blood of drunkards." See also LEHMANN'S *Physiological Chemistry*, vol. iii. p. 363.

It is therefore doubtful whether alcohol should be considered an alimentary principle, or merely a useful stimulant when properly diluted, and in certain conditions of the animal system.

(h) The Oleaginous Alimentary Principle.

11. Oil and butter contain carbon and hydrogen very nearly in the same relative proportion as starch and the various sugars; they differ from fat chiefly in containing more oxygen. Oleaginous matters are to a certain extent necessary as a part of human food, more especially in cold climates, where they are consumed in large quantities to support the animal heat, etc., and the large amount found in the yolk of egg and milk proves their importance in the progress of development.

Though the farinaceous and saccharine principles are convertible by the process of digestion into the oleaginous principle (*b*), it is advisable, when exposed to a cold and damp atmosphere, to make a free use of such articles as, in their natural state, contain it, or

to use it in the form of oil, butter, cream, etc., along with the ordinary food. The vegetable products which abound in oil are oatmeal, maize, sweet almonds, nuts, olives, cocoa, etc. Cream, cheese, and yolks of eggs, are also rich in this principle.

A judicious use of oleaginous aliments may be of great service in certain chronic affections, in incipient consumption, and in cases where it is desirable to diminish arterial action; but, when used in excess, they have a relaxing effect on the system, though they seem to nourish and fatten. The apparently good effects of cod-liver oil in phthisis, etc., is probably owing to its general character as an oil, rather than to the presence of iodine or any other peculiar principle.

Dr. CARPENTER says, "There is strong and increasing reason to believe that a deficiency of oleaginous matter, in a state fit for appropriation by the nutritive processes, is a fertile source of diseased action, especially of that of a tuberculous character; and that the habitual use of it in larger proportion would operate favourably in the prevention of such maladies as the employment of cod-liver oil unquestionably does in their cure. A most remarkable example of this is presented by the population of Iceland, which, notwithstanding the concurrence of every one of the circumstances usually considered favourable to the scrofulous diathesis, enjoys a most remarkable immunity from it, without any other assignable cause than the peculiarly oleaginous character of the diet usually employed." *

(2.) THE AZOTIZED CLASS.

12. This class embraces three alimentary principles, called Albumen, Fibrine, and Caseine. They all contain nitrogen or azote, combined with carbon, oxygen, hydrogen, and small portions of sulphur and phosphorus. Recent experiments have proved that animal albumen is identical with vegetable albumen, animal fibrine with vegetable fibrine, and animal caseine with vegetable legumine, derived from peas, beans, and other leguminous seeds.

* See CARPENTER'S *Human Physiology*, 4th ed. p. 383, and the *Medico-Chirurgical Review*, vol. v, p. 456.

(*a.*) *Albumen.*

13. The white of eggs is nearly pure albumen; the yolk also consists of albumen combined with a considerable amount of oil. Albumen also exists in the clarified juice of nutritious vegetables, such as cauliflowers, beet, carrots, and turnips. It is found in a solid form in almonds, nuts, and the cereal grains. Albumen is soluble in cold water, and a heat of 160° will coagulate it, after which it is no longer soluble in water. When in a concentrated state, as in the white of egg, or one part dry albumen dissolved in from five to nine parts of water, it may be coagulated by a heat between 140° and 160°; it then becomes solid and opaque. When diluted with more than 13 parts of water, as in vegetable juices, it requires a boiling heat to coagulate it, and it then falls in finely-divided flocks, or is only partially coagulated, and the liquid may be poured from one vessel to another. When diluted with from 1,000 to 2,000 parts of water, the solution becomes cloudy when heated. Albumen is coagulated also by alcohol, the gastric juice, and most acids. Acetic acid or vinegar does not coagulate it, but, on the contrary, dissolves it when coagulated. Its solubility is said to depend upon its containing a small portion of free soda, and a solution is effected by caustic, potash, or soda. When an excess of alkali, or when acetic or tartaric acid is present, it does not coagulate at a boiling heat. When the fluid in which albumen is dissolved is evaporated at a temperature not exceeding 126°, the albumen, or rather the albuminate of soda, may be dried without losing its solubility. It may then be exposed to a temperature of 212° without undergoing any change, and may again be dissolved in water. When a higher temperature is employed, the albumen passes into an insoluble form.

Coagulated albumen dries up into a yellowish, transparent horny mass, which in cold water swells up again to the opaque soft state of coagulated white of egg. Uncoagulated albumen soon putrifies, except it be dried; it keeps longer when coagulated; hence boiled eggs keep longer than when in their natural state. When albumen, fibrine, or caseine is brought into contact with an alkali, however weak, ammonia is immediately disengaged.

Albumen is difficult of digestion when taken too freely, as

when many eggs, almonds, or nuts are eaten. Neither this azotized principle, nor either of the other two when taken alone, is able to support life long, though they are very nutritious in combination with non-azotized principles.

Albumen entangles the air which is forced into it by beating, hence the white of eggs, when beaten, imparts lightness and whiteness to soufflés and light cakes. If albumen be added to any liquid which is not clear, and the mixture be subjected to a boiling heat, the albumen in coagulating unites with the impurities of the liquid, and either rises to the surface as a scum, or sinks to the bottom. As albumen is soluble in cold water and coagulated by hot water, all substances intended to be boiled for food should be plunged into very hot or boiling water, which should be kept in a state of ebullition for a few minutes and then reduced to between 158° and 165° till the articles are enough. But when the articles are intended for soup-making they should be cut into small pieces, put into cold water, and gradually heated, so that the albumen may be extracted by the water. Too great a heat applied in baking will also coagulate the albumen and cause a separation between it and the fluid part of the mixture.

(*b*.) *Fibrine.*

14. When the juices of certain fruits, roots, and other vegetable productions are allowed to stand, a spontaneous separation takes place in the course of a few minutes. A gelatinous precipitate, commonly of a green tinge, is deposited; and this, when acted on by liquids which remove the colouring matter, leaves a greyish white substance, which is *vegetable fibrine*.

It differs from albumen and caseine by being insoluble in water; hence it separates from the vegetable juice in which it was dissolved, exactly as fibrine does from blood. It is soluble in diluted alkalies and in acetic acid, but insoluble in alcohol. When it is digested with acetic and most other acids, it becomes gelatinous, and is in that state soluble in water.

Fibrine is found in the recently expressed juices of most vegetables, as carrots, turnips, and beet; it is abundant in the juice of grapes, and in the seeds of the cereal grains, as wheat,

rye, barley, oats, maize, and rice. In wheat it is included in the substance called gluten, the proximate principle which renders wheat so valuable in the formation of bread.

GLUTEN.—If wheat flour be kneaded under cold water, the starch will be washed out and deposited at the bottom of the vessel; the albumen, gum, and sugar will be held in solution by the water; and the tenacious, elastic, grey mass which remains undissolved is called raw, impure, or common gluten. If the water be carefully and slowly evaporated, the gluten may be preserved in a dry state for a long time without undergoing any change, but if left in a wet state, one of its constituents, fibrine, will soon assume the putrefactive fermentation, as was observed of albumen, and the remaining part, gliadine, is then soluble in strong alcohol. If raw gluten be well washed and then boiled in alcohol, the undissolved portion is vegetable fibrine, called also zymomin, from ξύμη ferment; the alcoholic solution, when subjected to slow evaporation, yields *pure gluten* or *gliadine*, which consists of two substances, one of which is deposited as the hot alcoholic solution cools, and has been termed *mucine*, the other remains in solution in the cold liquor, and has been called *glutine*.

The quantity of *pure gluten* (glutine and mucine) contained in different alimentary substances, has not been accurately determined. Wheat contains a considerable quantity of it, but the fibrine of other grain is unaccompanied by gliadine; barley and oatmeal yield only incoherent filaments of nearly pure fibrine.

COMPOSITION OF RAW GLUTEN.

Pure Gluten or Gliadine	Glutine	20
	Mucine	4
Vegetable fibrine or zymomin		72
Oily Matter		3·7
Starch, traces		

Raw gluten is highly nutritious, and is capable of sustaining animal life during long periods without admixture with any other principle, in which it differs from albumen and all other principles; this, no doubt, arises from its being a compound, as above stated.

(*e.*) *Caseine or Legumine.*

15. Caseine is probably not a simple organic body, but a mixture

of at least two different substances. It is the curd or solid part of milk when separated from the whey by means of rennet or an acid. Cheese made from skimmed milk, and well pressed, is nearly pure caseine; an identical substance, formerly called legumine, is found in the seeds of leguminous plants, as peas, beans, and lentils; it occurs also along with albumen, in the oily seeds, such as almonds and nuts. It exists, perhaps, in grape juice, and in other vegetable juices which yield very little vegetable albumen on being heated.

When the meal of peas, beans, lentils, or oats is soaked in cold water, and the mass strained through a sieve, there passes through a solution of caseine in which starch is suspended. When the starch has settled, the liquid is a solution of caseine, which, like milk, is always turbid from suspended fat. The fat will rise to the surface partly from the gradual action of the air on the dissolved caseine, lactic acid being slowly formed, which causes a gradual separation. This solution has all the characters of skimmed milk. Caseine may also be obtained from the sap of plants, and from the juice of the potato, turnip, and other roots, by first coagulating the albumen by heat, and then adding an acid.

When sweet almonds are reduced to a pulpy mass, mixed and rubbed down with from four to six times their weight of water, they yield a fluid, exhibiting, in its external appearance and properties, the greatest analogy to very rich cow's milk. The vegetable caseine of the almond, like animal caseine, contains sulphur, but it contains a larger proportion of nitrogen than the latter substance. The circumstance that animal caseine does not produce the same effect as a ferment in all cases, is, perhaps, to be ascribed to its inferior amount of nitrogen.

If to a solution of grape-sugar (which is the same in composition as starch-sugar and the solid part of honey), milk of almonds, or pounded almonds freed by means of *cold pressure* from their mixed or fatty oil, be added, and the mixture be kept in a warm place, it will soon run into a lively vinous ferment, and a brandy of a peculiar but highly agreeable flavour may be obtained by distillation from the fermented fluid.—Liebig.

Caseine is soluble in water, like albumen, when a small quantity

of free alkali is present; but it does not, like the latter, coagulate by heat, nor spontaneously like fibrine; though, when milk is heated in an open vessel, an insoluble pellicle of coagulated caseine is formed on it by the action of atmospheric oxygen.

This principle is coagulated by acids and alkalies, by alcohol when added in sufficient quantity, by treacle, from its containing glucic and melassic acids, by the leaves of flowers, as of the thistle and artichoke; also by sugar, gum, starch and most of the immediate vegetable products. The fresh flowers of the common Lady's Bed Straw, (*Galium verum*), is a vegetable rennet, and a much more elegant one than that afforded by the calf. If the flowers were dried and well preserved, they would, perhaps, produce the same effect. The Jews use the above instead of rennet, the Mosaic law forbidding them to mingle meat with milk.

About a dessert spoonful of diluted acetic acid or vinegar is sufficient for two pints of milk. It redissolves if the acid be added in excess. The coagulation of milk by acids is said to be owing to the affinity which the latter have for the water which holds the caseine and butter in suspension, for whatever quantity of acid is added, it is always found in the serum, whilst the suspended caseous matter is sweet. The coagulum by acids falls to the bottom of the serum, that by alkalies swims on the surface. Liquid caseine, as it exists in milk, is coagulated in the stomach by the gastric juice, and the coagula thus formed are subsequently dissolved. In this form caseine is easy of digestion.

Coagulated caseine is soluble in weak alkaline liquids, but not in water. It owes its solubility in milk to the small quantity of alkali which is present.

ON THE NUTRITIVE PROPERTIES OF ALIMENTARY PRINCIPLES.

16. It is the opinion of many eminent chemists and physiologists that food answers two essential and distinct purposes in the animal economy. 1st. The renewal of the structure of the body, which is continually undergoing decomposition; and, 2nd, the production of animal heat. Some suppose that the former of

these purposes is solely effected by the assimilation of the AZOTIZED PRINCIPLES contained in all nutritious substances; and that the NON-AZOTIZED PRINCIPLES minister chiefly to the support of respiration, and to the production of animal heat. LIEBIG asserts that the non-azotized principles are incapable of conversion into blood, or of supporting life; but in one of his recent works he intimates that this is possible, and a large amount of evidence might be adduced in refutation of the opinion he first entertained.* Neither albumen, nor starch, nor any other isolated abstract principle, however, can long support life; a combination of two or more being requisite for this purpose.

17. Fruit, grain, roots, and all other vegetable substances used as human food, contain two or more principles belonging to each class, but in very different proportions, the azotized principles prevailing in one article, the non-azotized in another.

Until very lately, scientific men have been accustomed to estimate the nutritive value of alimentary substances by the amount of nitrogen or of azotized principles contained in them; but recent experiments render it nearly certain that the non-azotized principles are a more correct measure of value, and that a liberal supply of the saccharine, amylaceous, oleaginous, and acidulous principles, is much to be preferred to an excess in the albuminous, and other azotized principles.†

It should also be observed that those articles which contain the most nutriment are not always the most wholesome; organic structure, climate, constitution, state of health, and other circumstances, must always be taken into consideration in making the selection. It will be judicious, therefore, till organic chemistry and physiology shall supply us with more certain data, so to mix the various compound aliments as to combine both classes of aliments, and so to conduct the various processes of cookery as not to exclude any principle requisite for complete nutrition. This may serve as a general direction, but the organs

* See *Food and Diet*, by Dr. PEREIRA, p. 43; *Fruits and Farinacea the Proper Food of Man*, 2nd ed. p. 107.

† See *Fruits and Farinacea the Proper Food of Man*, 2nd ed. p. 120; LAWE'S and GILBERT'S Experiments, *Transactions of British Association*, 1852; and Mr. ODLING'S Lecture before the Society of Arts, 7th April, 1858.

of sight, smell, and taste, as regards quality, and a natural appetite as regards quantity, are at present, and probably ever will be, our safest guides. True science and pure instinct speak the same language, and lead to like results; thus, peas, beans, and other leguminous seeds, in their dried state at least, contain an excess of nitrogen, and their flavour is disagreeable; but mix them with starchy or carbonaceous products, as rice, potatoes, butter, etc., in certain proportions, and you will produce a compound at once pleasant to the palate, and well adapted to nutrition. See 275 to 278.

ON THE VEGETABLE AND ANIMAL PRODUCTS USED IN VEGETARIAN DIET.

18. The articles used as food by Vegetarians may be classed under the following heads:—1. Fruits; 2, Seeds; 3, Roots, Tubers, and Stems; 4, Bulbous Roots or Buds, and Young Shoots; 5, Leaves, Leaf-stalks, and Bracts; 6, Flowerless Plants; 7, the Animal Products—Milk, Cream, Butter, Cheese, Curds, and Eggs.

(1.) Fruits.

19. Fruits, whether raw, cooked, dried, or preserved, are very wholesome, and should always form a part of Vegetarian diet, especially at the two principal meals, breakfast and dinner. They contain from 70 to 90 per cent. of water, and the remainder consists chiefly of legumine, gum, pectine, and sugar, together with malic and other vegetable acids, and a small portion of nitrogenous matter. The sugar in ripe fruit is from 10 to 20 per cent., in dried figs 62 per cent. The amount of starch and azotized principles being small, they should, in cold climates, be eaten with bread, or other farinaceous products, otherwise the muscular tissue and animal heat will in general be imperfectly supported.

Fruit has frequently been charged with producing indigestion, cholera, and other serious diseases; there is, however, no necessary connexion between fruit and disease, and, when taken judiciously, it is highly conducive to a healthy state of the secretions.

The following precautions should be observed:

1. Persons not accustomed to fruit should adopt it by degrees.

2. Fruit should be eaten as a part of a meal, with bread and other farinaceous substances.

3. It should not be eaten after a hearty meal of animal food and other mixtures.

4. It should either be ripe, or stewed with sugar; or baked either alone or in pies, puddings, etc.

5. Firm, fleshy fruits, as plums, apples, nuts, should be well masticated, otherwise the saliva and gastric juice cannot easily penetrate them, and indigestion is almost certain to be the consequence. The same precaution should be observed with regard to mushrooms, celery, onions, and other vegetables of a firm or tough texture. The fruits best known in this country are apples, pears, quinces, medlars, plums, peaches, apricots, nectarines, grapes, gooseberries, currants, mulberries, strawberries, raspberries, brambleberries, whortleberries, cranberries, oranges, lemons, pineapples, melons, cucumbers, vegetable-marrows, pumpkins, and what are sometimes called *spring fruit*, viz., rhubarb stalks.* The principal dried fruits are dates, figs, raisins, prunes, currants, etc. The following foreign fruits are also much esteemed when they can be obtained ripe and fresh: The loquat, pomegranate, litchi, longan, rambuton, akee, guava, marmelos, water-melon, plantain, banana, mango, mangostan, bread-fruit, durion, jujube, juvia, avocado pear, anchovy pear, custard apple, papaw, etc.

(2.) Seeds.

20. Seeds constitute the most important division of human nutriment; they are abundantly distributed throughout the earth, and are equally adapted to the wants and organization of man, whether he reside within the tropics, or in higher latitudes. In tropical climes, rice proves highly nutritious; while "the Hudson's Bay Company find, by experience, that two pounds and a-half of maize flour a day is fully equal, or even superior, in sustaining the capacity both for muscular exertion, and for bearing

* As rhubarb contains oxalate of lime, it is condemned by some chemists as likely to produce stone in the bladder or kidneys, but I do not apprehend that any danger need be feared from its use by Vegetarians; such effects more generally arise from a free use of animal food.

cold, to the eight pounds of fat meat, which constitute the usual allowance."—CARPENTER.

Rice, maize, and millet are produced between the equator, and 40° or 45° of latitude; wheat, rye, and buck-wheat, from 40° to 60°; and barley and oats are cultivated as far as 70° north latitude.

The principal seeds are—

1. Those of the Gramineæ or grass tribe, sometimes called the cerealia, viz., wheat, oats, barley, rye, rice, maize or Indian corn, millet, sorghum, and durra, or guinea corn.

2. The Leguminosæ, as peas, beans, lentils, kidney beans, or haricots.

3. The Cupuliferæ, as chestnuts.

4. The Polygonaceæ, as buck-wheat.

5. The oily seeds, as the almond, walnut, filbert, etc.

The chief constituents of these are albumen, fibrine, glutine, mucine, starch, sugar, and gum.

(*a.*) *Gramineæ or Grass Tribe.*

21. The cereal grains, either whole, or ground into meal or flour, are, when sufficiently and plainly cooked, nutritive and easily digested. The undressed meal should be preferred to fine flour for bread and all preparations in which colour is of little consequence, as it is more wholesome for most persons, though not so nutritious. The inner surface of the bran contains several azotized principles, which have the remarkable property of liquefying the starch, and converting it into dextrine and sugar; it thus acts as a ferment, and hence its value in bread-making and the process of digestion. Meal, with the bran in it, is, however, on this very account more liable to deterioration, dependent upon an altered condition of the albumen. The late Professor J. F. JOHNSTON and other chemists state that the bran of wheat contains more gluten than an equal weight of either the grain as a whole, or the whiter part of the flour; hence, they conclude that bread made with undressed meal is more nutritive than when made with fine flour. This opinion, however, is founded upon the assumption that the azotized principles alone are the correct measure of value, whereas it is now well ascertained "that the bread-making

value of flour, and its price in the market, are proportionate, not to the amount of gluten, but to the amount of starch which it contains, and the finest quality of flour, that obtained from the centre of the grain, is always poorest in azotized constituents," consisting almost entirely of starch. It also appears, from an extended course of experiments by Mr. LAWES and Dr. GILBERT, that in the most fully matured crops of wheat, the proportion of nitrogen is lowest, and in the least matured, the highest; that both in Europe and America the most matured crops were grown in the coldest latitudes, and that the characteristics of a highly matured crop are, low proportion of water, low proportion of ash, and low proportion of nitrogen.

Hence it is that the wheat grown in this and other northern countries is not so well adapted for the formation of macaroni as the Italian wheat, the latter containing a much larger proportion of gluten.

22. *Wheat.*—The native country of this grain is unknown. It is said that a wild grass, abundant in Sicily, and called by botanists, *Ægilops ovata*, has by cultivation been transformed into wheat. The fibrine of wheat is combined with more gluten or gliadine than any other grain, hence its capability of being converted into light or raised bread. (14.)

Macaroni, vermicelli, and Cagliari paste are preparations from wheat. Of the first there are three kinds, the *pipe*, the *celery*, and the *ribbon* macaroni. Vermicelli is similar to macaroni, but drawn into finer threads. The Cagliari paste is in the form of stars, rings, *fleurs-de-lis*, Maltese crosses, etc. They are used principally in soups, puddings, or mixed with cheese.

Semolina or mannacroup and soujee are granular preparations of wheat deprived of bran. They consist of the large hard grains of wheat flour retained in the bolting machine after the fine flour has passed through its meshes. Semolina is generally imported from the Baltic, and in Russia it is probably manufactured from buck-wheat. It is of a dingy white colour, and has a farinaceous and rather insipid taste.

23. *Oats.*—When oats are deprived of their integuments or coverings, they are called *grits* or groats; these, when crushed, become *Embden groats*, and, when ground into flour, *prepared groats*.

Oatmeal is prepared by grinding the kiln-dried seeds deprived of their husk and outer skin. It is of two kinds, coarse or Scotch oatmeal, and fine oatmeal. Cakes, etc., prepared from the former, do not assume a starchy consistence.

Oatmeal is rich in fibrine, and contains more fatty matter than any other of our cereal grains; hence, it is very nutritious and wholesome. When it disagrees with the dyspeptic, it should be macerated for a few hours in cold water, and occasionally stirred. When long macerated, sowens or flummery is formed from it.

24. *Barley.*—This grain has been found wild in Sicily and Russia. It is generally cultivated in northern countries, and will grow in a climate where wheat would not arrive at perfection. The husk is slightly acrid, and when it has been removed, the grain is called *Scotch*, *hulled*, or *pot-barley*. When all the integuments have been removed, and the seeds rounded and polished, they constitute pearl barley, and the flour obtained from it is called *patent barley*.

Count RUMFORD considered barley, when used for soup, much more valuable than any other grain. "It is astonishing," says he, "how much water a small quantity of barley-meal will thicken, and change to the consistency of jelly: and if my suspicions with regard to the part which water acts in nutrition are well founded, this will enable us to account, not only for the nutritive quality of barley, but also for the same quality in a still higher degree which sago and saloap are known to possess."

Scotch or hulled barley makes excellent puddings, either alone or with rice; it requires more boiling than rice.

The Roman gladiators were named *hordearii*, because *hordeum* (barley) formed a large proportion of their food.

Barley is considered more laxative than the other cereal grains. *Hordeum hexastichon*, winter barley or *bigg*, is cultivated chiefly in the north of England and Scotland. It is more palatable than that of the long-eared barley from a rich soil; and the barley cakes made from it in the Highlands are particularly sweet and delicate. Barley-meal is sometimes mixed with oatmeal for making porridge, which is considered much better than when made with oatmeal alone.

25. *Rye.*—Rye-meal can be formed into raised bread, as it contains a sufficient quantity of gluten for that purpose, but not so

much as wheat. As the husk possesses an aromatic and slightly acidulous flavour, it should not be removed, but ground up with the meal. Rye bread differs little, in nutritive quality, from that of wheat, but it retains its freshness and moisture longer than wheaten bread. The former is less astringent than the latter, but with those who are not accustomed to it, it is apt to produce acidity of the stomach. The gluten of rye differs from that of wheat, and according to HELDT, it contains very little fibrine, but a nitrogenous substance, which he calls vegetal gelatine.

26. *Rice.*—This grain is indigenous in India, but the finest sort is grown in Carolina. It was cultivated by the Egyptians, Persians, Babylonians, and all the Eastern nations. It is nutritive and emollient, but contains little fat. Rice may be cooked in a great variety of ways, and being easy of digestion, and mild in its qualities, it forms an excellent diet for the invalid, as well as for the strong and healthy, especially when combined with milk, cheese, eggs, etc. It has been generally said to contain little nitrogen, and therefore has been thought to be less nutritious than the other grains. Professor JOHNSTON says rice contains 7 or 8 per cent. of gluten, and there can be no doubt of its being both nutritive and wholesome. MERAT and DE LENS state that three-fourths of the inhabitants of the earth are nourished by it.

27. *Maize or Indian Corn.*—This grain is of great antiquity, and its range of growth is from the equatorial regions to about 50° north and 40° south. It is a wholesome and nutritious aliment, and contains more oil or fat than any of our common grains; hence its generally reputed fattening quality.

Indian corn is too large and too hard to be used whole in its ripe state, and is manufactured into three distinct articles, namely, hominy, Indian meal, and maize powder. The first is composed of the white and flinty matter of the corn, and is either fine, about the size of a pin's head, or large, almost the size of split peas. Indian meal contains a portion of the finer particles of bran. Maize powder consists of the white or flowry portion of the corn, and is used for the finer preparations in cookery.

Polenta is the name by which the flour of maize, as prepared in Italy, is known; it is considered superior to that of American produce. It may be obtained at the Italian warehouses in

London, but its high price will prevent it being generally used. One-third of maize flour and two-thirds of wheaten flour form a pleasant variety of bread, when raised and kneaded in the usual way.

As Indian meal is deficient of true gluten, it cannot be converted into raised bread.

The glutinous residue from the washing of Indian corn dough differs from the gluten of wheat, and is characterized by the solubility of about two-thirds of it in alcohol, and, therefore allied to vegetal gelatine. Indian meal should be boiled over a slow fire for two or three hours, which will effectually remove a certain disagreeable raw taste, which simple baking will not entirely effect.

Millet and other small grains are seldom used for human food in this country.

(*b.*) *Leguminosæ.*

28. The leguminous seeds best known in this country are peas, beans, and lentils.

These seeds contain more nitrogen than the cereal grains, but less oil or fat; the latter, therefore, should be added, in preparations of leguminous seeds, in the form of butter, cream, oil, yolk of egg, or by mixing the meal of peas, etc., with oatmeal or Indian corn meal.

Peas.—In the manufacture of the finest "*brose meal*," the foreign white and the field-grey peas are mixed, in various proportions, the finer qualities being made chiefly from the first, and the inferior from the second. The quality of the meal also depends upon the greater or less portion of the envelop contained in it, the central portions of the pea being most agreeable.

Dr. William Davidson, in his *Treatise on Diet*, says, "The pea is easily digested, and is less liable to produce acidity than oats, barley, etc. It is well adapted, as a farinaceous aliment, for those who have weak digestive organs, particularly if the fine meal be employed. A considerable quantity of boiling water should be mixed with the farina in making the preparation, so as to give it a thin consistency; for by this means it is better cooked and more digestible. It is an excellent species of food for children,

particularly those who have derangements of the stomach and bowels, and when proper attention is paid to the quality of the meal and the cookery, it is generally highly agreeable to them."

Pulse made from the ordinary kinds of meal may produce flatulency, but the finer qualities of meal will have no such effect.

Beans.—The bean agrees in dietetic properties with the pea, but is less agreeable and rather more difficult of digestion: it is therefore seldom used by man in its ripe state. In the green state, the garden bean is used as a constituent of broths, and other culinary preparations; and, when deprived of its envelop forms an agreeable and digestible addition.

Kidney Beans.—The immature pods of kidney beans are well known as a delicate and highly esteemed vegetable, and the ripe seeds, known by the name of *haricots*, prepared in various ways, are an excellent edible. The dwarf white is extensively cultivated in France for the latter purpose, and the seeds of Dutch runners, which are larger and of a superior quality, are made into a kind of soup, which is held in much esteem in Holland.

Lentils.—These have long been in repute on the continent, but it is only lately that they have been much used as human food in England. When deprived of the skin and split, or ground into meal, they are an excellent addition to soups.

Farinaceous Preparations.

29. Numberless farinaceous preparations are obtained by combining the meal or flour of two or more of the preceding grains, as well as that derived from roots and other sources.

Densham's Farinaceous Food.—Three parts wheat-flour, and one part barley-meal intimately mixed. Place the mixture in tins lined with paper, put them in an oven, heated to about 200° F. for three hours. Care should be taken not to brown the mixture; it may then be kept without becoming sour or musty, and makes excellent puddings. It loses from 25 to 30 per cent. in weight by being thus heated.

Hard's Farinaceous Food.—Wheat-flour, baked.

Leath's Alimentary Farina.—Wheat-flour slightly baked and sweetened with sugar, together with potato-flour, and a very small quantity of Indian-corn meal and tapioca.

The basis of BRIGHT'S Nutritive Farina and of the Prince of Wales's food is potato-starch; GARDINER'S Alimentary Preparation consists chiefly of fine rice flour.

Bullock's Semola.—Gluten of wheat, with a small portion of starch. Very like, if not identical with, Semolina.

Du Barry's Revalenta Arabica.—Egyptian or Arabian lentils and barley meal. Sugar or salt may be added, also celery seed, or some other flavour.

The following is a good mixture:—

Red or Arabian lentil flour, or pea flour.	2 lbs.
Barley flour, or Indian-corn flour, or rice flour.	1 lb.
Salt or Sugar.	3 oz.

Lentils and peas do not differ much in their properties.

30. *Sago.*—This article is obtained from the pith of various species of palms. It is manufactured in the Moluccas, and is imported into this country from Singapore. There are three kinds of it, namely, sago-meal, pearl-sago, and common sago. Pearl-sago consists of small pinkish or yellowish grains, about the size of a pin's head, and is the kind in general use for domestic purposes.

Sago is nutritive and easy of digestion; it should be washed in two or three waters, and then soaked in cold water for an hour, previously to being cooked. By bleaching it may be rendered perfectly white.

"Sago and saloop," observes Count RUMFORD, "thicken and change to the consistency of a jelly (and, as I suppose, prepare for decomposition) a greater quantity of water than barley, and both sago and saloop are known to be nutritious in a very extraordinary degree."

31. *Tapioca.*—This is obtained from the tuberous root of a poisonous plant found in the Brazils, called *Jatropha manihot*. The farina, or starchy matter, is dried on hot plates into the form of irregular small lumps, in which state it is called Tapioca. Though consisting principally of starch, it is said to contain about three per cent. of gluten. It is free from colouring matter, on which account it is purer than sago, and it yields a more consistent jelly than some other kinds of starch. Like all

other starchy matters, after having absorbed the liquid in which it is cooked, it becomes soft and almost aqueous if cooked too long.

As tapioca is very hard, it is generally necessary to macerate it in the liquid in which it is to be boiled for an hour or two before heat is applied, but being more soluble than sago, it does not require to be boiled so long.

32. *Arrow-root.*—A very pure, white, amylaceous powder, obtained from *Maranta arundinacea* in the West Indies; *Curcuma angustifolia* in the East Indies; and the South Sea, or Tahiti arrow-root, is from *Tacca pinnatifida;* but that from Bermuda is most esteemed.

Arrow-root makes a firm jelly with boiling water, and in this respect it is superior to wheat-starch.

33. *Tous-les-Mois; Canna Starch.*—Said to be procured from the root, or rhizome of *Canna coccinea*, and is imported from St. Kitts It yields a stiffer jelly than common arrow-root, devoid of colouring matter, and of any disagreeable flavour or odour. It is very soluble and very easily digested. Its grains are larger than those of any other starch.

34. *Potato Starch or English Arrow-root.*—This agrees very much in general dietetic properties with other amylaceous substances, previously described, but it does not yield so firm a jelly, and is more apt to cause acidity than arrow-root, especially in infants. It is used by the cook in the preparation of soufflés, and in thickening sauces, soups, etc.

Pastry is improved in appearance and crispness by the addition of potato starch to wheat-flour; equal quantities of each may be used.

To obtain potato starch, wash and pare some potatoes, grate them into a sieve, standing in a bowl of cold water, the starch will pass through the sieve and sink to the bottom of the water; wash and squeeze the fibre well which is retained in the sieve, till all the starch has passed through. As soon as the starch has settled, pour off the water, add more clean water to the starch, stir it up well that every portion may be well washed, and when it has again settled pour off the water. Thus wash the starch in several waters till quite white, and after pouring off the last water, dry the starch carefully before the fire, stirring it occasionally, and

taking care that it is not exposed to too great a heat. When quite dry and in a fine powder, bottle it for use.

Potatoes yield about one-fourth or one-fifth their weight of starch.

Potato starch is used for imitating tapioca, arrow-root, etc.

In tapioca, the starch globules are spherical, very small, equal in volume, and resemble those in wheat starch.

The globules of arrow-root are small, elliptical, pearly, or translucent.

Wheat starch exhibits a glistening appearance.

Potato starch has the appearance as if densely studded with minute globules of mercury, large and elliptical in form, but somewhat smaller than those of tous-les-mois.

35. *Inuline.*—There is a peculiar modification of starch in the tubers of the Jerusalem artichoke, dahlia, and many similar plants, which has been called *inuline*. It contains a rather smaller proportion of carbon than common starch. It is extracted from the roots by washing the rasped root in a sieve and allowing the inuline to settle, or by boiling the sliced roots in water and filtering while hot; the inuline separates as the solution cools, and is deposited as a brittle white mass, formed of crystalline grains, or as a fine powder. It is tasteless, insoluble in cold, very soluble in hot water.

36. *Lichenine.*—This is another variety of starch, found in *Cetraria Islandica*, or Iceland Moss. It may be purified from a bitter principle by a little cold solution of potassa. When pure, it forms a nearly colourless, tasteless mass, which swells up into a transparent jelly with cold water, and dissolves entirely in hot water. It is precipitated by alcohol, and when its solution is boiled, it forms pellicles like milk, which adhere to the vessel.

37. *Salep, Salop, or Saloop.*—This is obtained from *Orchis maculata* and other orchideous plants, by pulverizing the bulbs. It has a dingy yellowish-white colour, resembling dark-coloured gum arabic in a state of powder. Its taste is very similar to that of gum tragacanth, and it adheres to the teeth when chewed. It requires for its solution a large quantity of water; about sixty parts of boiling water being necessary to dissolve one of salep, and

the resulting mucilage is very thick. It is very nutritive and easily digested; it is made into jellies, pottage, paste, etc., with the addition of sugar and aromatics. It is said to contain the greatest quantity of nutriment in the least possible bulk.

38. A simple enumeration of a few of the Cupuliferæ, Polygonaceæ, and oily seeds, will be sufficient, namely, chestnuts, buckwheat, hazel-nuts, walnuts, almonds, cocoa-nuts, Brazil-nuts, Cashew-nuts, Pistachio-nuts, Suwarrow, etc.

Some of the oily seeds, as the almond, walnut, hazel-nut, cocoa-nut, etc., need no cooking, but nearly all the other seeds require the aid of heat to render them palatable and digestible.

(3.) Roots, Tubers, and Subterraneous Stems.

39. The principal roots, etc., used as human food in this country, are turnips, carrots, parsneps, beet, potatoes, Jerusalem artichokes, scorzonera, rampions, radishes, and skirret.

Turnips.—These are of various sorts, all containing albumen and sugar. The French *navet* is a variety, and has more the shape of a carrot. It has a very fine flavour, and two or three of them are said to give as much flavour to soups as a dozen common turnips. The peculiar flavour resides in the rind, which should not be cut off, but only scraped.

Carrots.—They contain crystallizable and uncrystallizable sugar, a little starch, extractive, gluten, albumen, etc. They contain about 14 per cent. of nutritive matter. The outer or red part is the most pulpy and sweetest, the yellow or central part is more stringy. The greater the proportion of the external part, the more valuable the carrot.

Parsneps.—Similar in quality to carrots.

Red Beet.—This root contains a large portion of crystallizable sugar, albumen, fibrine, extractive, fixed oil, etc. When thoroughly boiled, or baked in an oven, it is sweet, agreeable, tolerably digestible, and contains about 15 per cent. of nutritive matter. It is used as a garnish, a pickle, and a salad.

Potatoes.—Next to the cerealia these are the most important and valuable of the esculent vegetables, and were introduced from America by Sir Walter Raleigh in the year 1584, but their

cultivation in England did not become general till about 1760.

When in good condition and cooked by boiling, potatoes form a nutritious and easily digestible article of diet, though they contain little nitrogen, their principal ingredient being starch. As ordinarily cooked, or sliced raw into vinegar, potatoes are an admirable preservative against scurvy; this is probably due to the presence of *citric acid.*

Bright's Universal Sanative Breakfast Beverage appears to be a mixture of potato-starch and chocolate.

Jerusalem Artichokes.—Natives of Brazil, brought to England in 1617. They contain about 15 per cent. of sugar, 77 per cent. of water, and small portions of inuline, gum, albumen, fixed oil, etc. They are much relished by some persons, either boiled, roasted, or used in soups, and are considered wholesome and nutritious.

Dioscorea Batatas, or Chinese Yam, is being introduced into France and England, and is said to be likely to supersede the potato.

Salsafy, or Goat's Beard; Tragopogon porrifolius. — Roots long, white and fleshy, tapering like the parsnep; flavour mild and sweetish. The roots may be boiled and dressed like asparagus; and the flower-stalks, if cut in spring on the second year before they become hard, make a good dish, dressed as asparagus. When the roots are fried they are said to resemble smelts in flavour. See 222.

Scorzonera, or Viper's Grass; Scorzonera Hispanica.—A hardy perennial, with a stem from two to three feet long. The roots are black externally, white and fleshy within, and sweet in taste, especially when cooked. Previously to being cooked they should be scraped and steeped in water, to remove their bitter quality.

Rampions; Campanula rapunculus.—Roots long, white and spindle shaped. They are indigenous, and are eaten raw like a radish, having a pleasant nutty flavour.

Hamburg parsley (*Apium petrosilinum, var. Tuberosum.*)—Roots cooked as parsneps.

Radishes; Raphanus sativus.—These do not contain much nutriment. When boiled they are more digestible than when

eaten raw; in the latter state some persons eat them with sugar in preference to salt.

Skirret; Sium sisarum.—WORLIDGE, in 1682, calls this the sweetest, whitest, and most pleasant of roots. It is perennial, and a native of China. It has bunches of fusiform, fleshy roots of a russet colour externally, white within. Flavour mild, sugary, and slightly like celery. It may be boiled, fried, or used in soups.

40. Some roots, etc., as turnips, carrots, radishes, are palatable and wholesome, in small quantities uncooked; others, as potatoes, require the aid of heat to render them either pleasant to the taste or digestible. The starch with which they abound is converted by heat into dextrine (6), in which state it is more soluble; but even raw potatoes, washed, pared, and sliced into vinegar, are very beneficial when used as a salad in scorbutic complaints.

When roots, tubers, etc., are stored for future use they should not be cleansed from the loose earth, lest the fibres be injured, and the evaporation from them increased.

Previously to being cooked, they should be washed very clean, a brush being employed when necessary; they should not be pared. Beet root should not even be scraped, nor should the fibres or smaller divisions of the root be removed, as it would destroy the colour.

Tubers and roots should not be divided or cut into smaller portions, except when they are too large for the heat of the water to penetrate them sufficiently to render them tender, or when intended for soup. Large turnips may be peeled and cut into quarters; old potatoes in Spring should be peeled or scored round with a knife, and cleaned from specks; large carrots should be cut in two, and split a few inches at the top.

Some potatoes, when taken from the winter store, are improved by being peeled and steeped in cold water for ten or twelve hours, before they are boiled. The water absorbed during the steeping is afterwards driven out by the heat, and with it any bad flavour the potatoes may have acquired.

Turnips and parsneps may likewise be soaked in cold water; turnips being previously peeled.

(4.) Bulbous Roots, or Buds and Young Shoots.

41. *Onions, Leeks, Garlic, Shallots, Chives, and Rocamboles.*—All these owe their peculiar odour and flavour, as well as their pungent and stimulating qualities, to an acrid volatile oil which contains sulphur. This oil becomes absorbed, quickens the circulation, and occasions thirst. If the volatile oil be dissipated by boiling, these bulbs, or rather buds, no longer possess any acrid or stimulating qualities. They then form mild mucilaginous, saccharine, digestible aliments, whereas in the raw state, that is, with the oil, they are pungent, acrid, stimulating, and difficult to digest. When eaten in this state they should be minutely divided and thoroughly masticated, otherwise, as was observed of fleshy fruit (19), the saliva and other secretions cannot act upon them readily, and much inconvenience is frequently experienced.

Professor Johnston says, the onion is remarkably nutritious, containing from 25 to 30 per cent. of gluten. Socrates in Xenophon attributes to the onion the virtue of augmenting the force and courage of warriors.

Garlic is composed of several oblong subordinate bulbs, which have been named *cloves*.

Leeks are less acrimonious than onions or garlic.

Shallots, Chives, and *Rocamboles* possess similar properties to those above mentioned.

Asparagus.—This as a green vegetable is generally much relished, and is considered nutritive and digestible.

(5.) Leaves, Leaf-stalks, and Bracts.

42. The principal esculents to be enumerated under this head are—1st, brassicaceous plants (*cabbages*) in great variety, including chou de Milan, couve Tronchuda, Brussels sprouts, borecole or kale, broccoli, cauliflower, Savoy, etc.; sea kale, lettuce, endive, celery, stalks of the silver beet, artichokes, spinach, and numerous pot herbs, as mustard, garden cress, water cress, parsley, mint, thyme, marjoram, sage, rue, savory, tarragon, tansy, basil, borage, chervil, clary, fennel, horse-radish, alisander,

sorrel, etc., also rhubarb, previously described, as *spring fruit* and artichokes.

"The cabbage is an especially nutritious vegetable," says Professor JOHNSTON. "The dried leaf contains, according to my analysis, from 30 to 35 per cent. of gluten, (about 2·5 in the natural state), and is, in this respect, therefore, more nutritious than any other vegetable food which is consumed to a large extent by men and animals. I know, indeed, of only two exceptions—the mushroom, which in its dry matter contains sometimes as much as 56 per cent. of gluten—and the dried cauliflower, in which the gluten occasionally rises as high as 64 per cent. Like peas, beans, and other articles abounding in nitrogen, they require the addition of oily or fatty matter.

M. CHEVREUL has ascertained that sulphuretted hydrogen is disengaged during the boiling of cabbages, turnips, onions, etc., which, in all probability, is the source of the disagreeable odour. The same author recommends water charged with common salt, for boiling such herbs, as it renders them agreeable and saccharine in taste. Not more than an ounce of salt to a quart of water, if the object is to soften and reduce the strong fibres; a stronger solution will preserve the tissues from being too much acted upon by the water, and from being rendered too pulpy (4). Care should be taken to continue the cooking till the vegetables are quite tender.

The *Couve Tronchuda* is grown chiefly for the mid ribs of the outward large leaves, which, when divested of their green parts and well boiled, resemble *sea kale*. The heart or middle part of the plant, however, is the best for use; it is peculiarly delicate, tender, and agreeably flavoured, without any of the coarseness which often belongs to the cabbage tribe. The dwarf variety, murciana, is much more tender.

Celery.—The whole plant is used either in a green or blanched state, as well as its seeds. In the former, and also in the latter form, it is used to flavour soups.

Celeriac, or Turnip-rooted Celery.—The root is cut into slices and used in German salads, both roots and leaves are cooked as celery.

Lettuce is one of our best salad herbs. It is eaten raw in

French salads, with cream, oil, vinegar, salt, hard-boiled eggs, etc. It is excellent when stewed, and is frequently used in vegetable soups.

GALEN employed boiled lettuce, when fatigued or exhausted by labour, in order to procure tranquil sleep. "Lettuce abounds in a cooling, bland, pellucid juice; but the more advanced plant contains a bitter, milky juice, which has a slight tendency to promote sleep. Hence lettuce leaves are eaten at supper by those troubled with watchfulness."

Endive.—The leaves are the only parts used, and these only when blanched to diminish the natural bitterness of taste. It is one of our best autumn, winter, and spring salads, and is also stewed like lettuce.

Succory.—The leaves are blanched and used as a winter salad. In Belgium the roots are scraped, boiled, and eaten along with potatoes, or with a sauce of butter and vinegar.

Dandelion, tarragon, mustard, cresses, purslane, chervil, rape, corn-salad, the radish, etc.

Silver Beet.—The mid ribs may be stewed as celery, and the soft part of the leaf used as spinach.

Respecting the aromatic herbs, see *55*.

43. All vegetables should be gathered on a dry day, but not when the heat of the sun is very strong upon them. In general they should be used as fresh as possible, but artichokes are said to be improved by being kept two or three days before they are used. Green vegetables should not be put in water for the purpose of keeping them fresh, as it would dissolve and destroy some of their juices; they should be laid on a brick or stone floor, in a cool place, and not divested of their outer leaves till they are wanted. The best way of refreshing them is to cut off a portion of the stem and set the cut part in water, of which the vegetable will then absorb a portion to supply the leaves and make up for what has been lost by evaporation. When about to use them, remove all dead, tough, coarse, and useless leaves; if perfectly clean and free from insects they need not be washed, but cabbages, cauliflowers, and headed broccoli should lie an hour or more in spring water, with a little salt. Before boiling them shake them well in a colander, so as to remove all the cold water

from them, and take great care that no caterpillars or snails are concealed in them.

Cut off the stems of artichokes quite close, trim away the lower leaves, clip the points of all the others, and let the artichokes soak half an hour or more.

When peas and beans are not used immediately after being shelled, cover them with the pods.

The stalk ends of asparagus, cucumbers, and vegetable marrow may be put in cold water to keep them fresh.

(6.) Flowerless Plants.

44. The flowerless plants yielding human food, are ferns, lichens, sea-weeds, fungi, mushrooms.

The rhizomes of ferns and lichens are seldom resorted to for food except in times of scarcity; Iceland moss is used principally as a medicine. Several kinds of sea-weed, known by the names *laver dulse*, *sweet tangle*, etc., are much relished, and yield a strong jelly of starch or pectine. Among these may be mentioned *Fucus scoratus*, *ciliatus*, *pinnatifidus*, *palmatus*, *digitatus*, *esculentus*, *natans*, and *crispus* (Pearl or carrageen moss). Also *Agar-agar*, and *Gracelaria lichenoides*, or Ceylon moss (8).

The principal fungi used in this country are *Agaricus campestris*, or field mushroom, the morel, and the truffle. Various other species of mushrooms and other fungi are considered wholesome, as *Boletus edulis*, *lycoperdon*, or puff ball. Great care, however, should be taken in the selection, as many kinds are poisonous; and even the common mushroom should be thoroughly stewed and well masticated, otherwise it may prove very indigestible and injurious (19).

(7.) Animal Products.

45. These are—1, Milk, from which we have also cream, butter, whey, caseine or curds, and cheese; 2, Eggs.

(*a*) *Milk.*

There can be no doubt as to the wholesomeness of this fluid, it being nature's special provision for the support of the

young of all the mammalia, whether carnivora, herbivora, frugivora, or omnivora, if any such there be. Milk consists of myriads of exceedingly minute globular particles floating in a serous or watery fluid. The globules constitute butter, and may be separated by filtration, the filtered liquor being transparent. When milk is allowed to stand, the globules, along with some caseine, rise to the top in the form of *cream*, and when this has been removed, the remaining fluid is called *skim-milk*. The milk now deprived of its cream, if exposed for a day or two to a temperature of from 60° to 70°, becomes a thick coagulum, and the milk has become sour; lactic acid has been formed, which has occasioned the milk to separate into two portions, *curd* or *caseous matter*, and *whey*. Caseine thus spontaneously produced, will not form cheese, but is wholesome and excellent when eaten with a little sugar.

A little carbonate of soda, or potash, or calcined magnesia, added to milk, will retard its progress to a state of acidity.

Milk boils at 199°, water at 212°.

By boiling milk the curd (15) is partly coagulated by the action of the oxygen of the atmosphere, and the caseine rises to the surface in the form of a pellicle or thin skin; if this be removed it is succeeded by another, and the process might be continued till the remaining fluid would have a watery appearance, and be incapable of furnishing any more such pellicle.

When milk is very slowly evaporated without boiling, it forms a kind of thick extract of milk, which is called *frangipane*; and this being mixed with sugar, almonds, and orange flowers, constitutes a sweetmeat or custard.

The composition of milk is as follows:

COW'S MILK.

	NATURAL STATE.	EVAPORATED TO DRYNESS.	SKIM MILK.
Water	87	—	44
Curd or caseine	4½	34½	45
Butter, or fat	3	23½	6
Sugar (of milk)	4½	37	
Ash (nearly)	½	4½	5
	100	100	100

Ewes' milk, and goats' milk contain the largest amount of caseine and butter.

The milk first formed after the cow has calved possesses peculiar properties. It is named *colostrum*, *first-milk*, and *biestings*.

46. *Cream.*—Cream consists of a peculiar oily matter mixed with curd and whey, and the substances held in solution in the whey. Its consistency increases gradually by exposure to the atmosphere. In three or four days it becomes so thick that the vessel containing it may be inverted without any loss; in eight or ten days more it has no longer the flavour of cream, but of very fat cheese called *cream cheese*.

COMPOSITION OF CREAM.

Butter	4·5
Curd	3 5
Whey	92·0
	100·0

"The preparations known as Corstorphin cream, Devonshire cream, or clotted cream, consist of cream and the coagulated curd. They are nutritive and delicious substances, but apt to disagree with dyspeptics on account of the butter which they contain."—PEREIRA.

To preserve cream for a short time, boil it in a bottle, which must be afterwards well corked.

47. *Butter.*—When cream has been agitated for some time, it separates into two portions, namely *butter* and *butter-milk*, the latter containing the greatest part of the curd and whey.

In its usual state butter contains about one-sixth of its weight of substances contained in butter milk.

Butter is composed of three kinds of fatty matter, namely, *stearin*, *elain*, and a fatty substance called *butyrin*, from which three volatile oily acids are formed. Stearin, elain, and butyrin are combinations of certain oily acids and glycerin. In cold climates, good butter in moderate quantity is wholesome aud easily digested by a healthy stomach, but if exposed to a great heat, as in hot toast, rich pastry, or toasted cheese, it is frequently indigestible. Bread well toasted (64) and buttered when cold should always be preferred.

When butter is used for light pastry, it should be sweet, and free, or nearly so, from salt; to remove the latter, wash the butter in cold water and make it up with the hands into large lumps, squeezing the water well out; or work the butter well on a marble slab, or on the pasteboard, then press it lightly with a clean soft cloth to absorb the moisture, it will then be ready for use. If good fresh butter is used, it will require very little, if any working.

Butter is subject to become rancid, because it contains a small quantity of curd, water, and air, which may be removed as follows.

48. *To Clarify Butter.*—Heat the butter gradually over the fire in a double saucepan, to a little below the temperature of boiling water, by which means the air will be disengaged. Part of the impurities will rise to the surface and must be skimmed off, and the water and butter milk will be deposited. Decant the clear part, or pass it through a fine sieve or muslin, then put it in a bottle, which must be well corked.

If still greater purity be required, pour the clear fluid into another vessel containing water, heated to 140°, with which it must be well agitated and then left to cool, when the pure butter will rise to the top, and become solid; it may then be kept sweet for any length of time. It will be equal to the best Florence oil, and may be used for salads, sauces, raised pastry, or for frying. When wanted for use, it should be gently heated and poured out of the bottle, or cut out with a knife or other instrument.

Butter is not changed by a heat just sufficient to dissolve it (96°), but if raised to the temperature of boiling water (212°), it becomes oily as above.

49. *Butter Milk.*—As this contains the caseine, the sugar, and the salts of milk, it must possess nutritive qualities. It forms a very agreeable cooling beverage in febrile and inflammatory diseases, and is more easily digested than entire milk. The acid of butter-milk does not increase the acescency of the stomach, or occasion flatulency; it may, therefore, be safely used by dyspeptic persons. Butter-milk is sometimes prepared by agitating new milk in a bottle, and separating the

butter when it has been formed. The taste of turnips in butter may be obviated by adding butter-milk to the cream previously to churning, or by adding a little salt-petre.

50. *Whey* and *Curd* may be formed from either new or skimmed milk, by various means (15). The whey contains sugar of milk, lactic acid, some salts, and frequently a little butter and curd. Boil a pint of milk, and at the commencement of ebullition, add either white wine or one drachm of cream of tartar, (bitartrate of potash) or of powdered alum, or a little citric acid in solution, or of lemon juice, or one ounce of tamarind pulp, or half an ounce of bruised mustard seed, etc. When the curd is formed, strain the whey from it. Whey may be regarded as alterative, nutritive, and laxative, and it is considered useful in febrile, inflammatory, and pulmonary affections.

51. *Caseine, or Curd.*—This nutritive product is combined more or less with oleaginous principles, according as it is made from new or skimmed milk. It exists in two conditions, partly in solution, and in part forming a transparent membrane, which surrounds the globules of fat, and keeps them from coalescing, as occurs when they consolidate into butter. If a few drops of acetic acid be added to a little milk, the globules become distorted, and drops of fat can be seen emerging from them by the aid of a good microscope, the investing capsule of caseine having been broken. It may be eaten with sugar, cream, etc., or it may be formed into cheese-cakes, or cheese.

When the curd is required for cheese-cakes, etc., it may be formed thus:—Beat an egg up with a dessert spoonful of flour, then add it, with half a tea-spoonful of powdered alum, to a pint of milk, nearly at the boiling point; the curd will then rise to the top; but if the addition be made after the milk has boiled, the curd will fall to the bottom.

52. *Cheese.*—This nutritious production is made from curd by pressing out the whey. It varies in quality and richness according to the materials of which it is made. It may be formed—1, of milk and cream, as Stilton cheese; 2, of entire milk, as Cheshire and Cheddar cheese; 3, of new milk mixed with skimmed milk, as in Gloucestershire; 4, of skimmed milk only, as in Suffolk, Holland, and Italy. Some of the most

agreeably-tasted cheese is made of skimmed milk, as the Parmesan, and some of the Dutch cheese. The former is made of skimmed cow's milk, not of goat's milk, as formerly supposed.

CHEDDAR CHEESE AND SKIMMED MILK CHEESE COMPARED.

	CHEDDAR.	SKIM MILK.
Water	36	44
Curd	29	45
Fat	30½	6
Ash	4½	5
	100	100

"Cheese is very nutritive, but somewhat difficult of digestion, particularly when tough, hard, or rendered tenacious by heat." When grated it is easier of digestion, because it then mixes more readily with other alimentary matters, and is thus more quickly dissolved by the gastric juice. It is liable to produce constipation, especially when new, and made from creamed milk.

(*b.*) *Eggs.*

53. Eggs consist of what is denominated the white and the yolk, both nutritious.

The former consists of nearly pure albumen, which coagulates into a firm white solid when heated to 159° (13); the yolk consists, in part, of a variety of albumen, and therefore, like the white, coagulates by heat, though less readily. Two-thirds of the yolk, in a perfectly dry state, is a bright yellow oil; it also contains from 3 to 4 grains of phosphoric acid. If an egg weighs 1000 grains, about 100 will consist of shell and membrane, 600 of the white, and 300 of the yolk. The white and yolk contain as follows:—

	WHITE.	YOLK.
Water	80	53·8
Albumen	15·5	17·5
Mucus	4·5	
Yellow Oil		28·7
	100·0	100·0

The shell is very porous, consequently, eggs lose weight by evaporation, especially in hot weather, air taking the place of the

fluid evaporated, and causing decay; hence, eggs become lighter the longer they have been laid, newly laid eggs being heavier than water with about 10 per cent. of its weight of salt, whilst old or bad eggs float in it. An egg, while boiling, loses 2 or 3 per cent. of its weight by the escape of albumen and salts, through the shell into the water, a certain portion of the water occupying their place; hence, eggs should never be boiled in impure or tainted water. For the same reason eggs should not be placed near anything of a musty or disagreeable odour.

Butter, or a mixture of oil and wax, rubbed over the shell, or a solution of gum arabic,* will preserve the egg from decay, by stopping up the pores, and, consequently, keeping out the air. If plunged for five minutes in water, heated to 140°, or boiled one minute and then oiled, it will be a still greater protection, as the albumen next the shell is thus coagulated.

The freshness of eggs may be ascertained as follows:—

1st. Recently laid eggs sink in water, containing about 10 per cent. of salt; bad eggs float in it.

2nd. If they sound hollow when shaken, they have not been recently laid.

3rd. If when held between the eye and a strong light, as the light of a candle, dark spots are observed on the shell, the probability is that the egg is bad, and this is certainly the case if there is no transparency in the shell.

4th. When an egg is quite fresh, the shell will be of a brilliant light yellow, and without spots.

5th. When the small end of a fresh egg is applied to the tip of the tongue, a cool sensation is produced, the same end of a stale or bad egg is felt warm, because the white of the former, being in contact with the shell, abstracts the heat from the tongue more rapidly than the air bubble in the latter.

It is always advisable to break each egg separately into a cup, lest one bad egg spoil the whole. The yolk as well as the white is soluble in cold water, and is coagulated in boiling water. When the yolk is beaten in water, it forms a true animal emulsion; and if warm water be employed and sugar added, there is

* Mucilage of gum arabic made with equal parts of gum and water. Apply two coats with a small brush, the second after the first is dry.

formed what is called *un lait de poule*, which is a pleasant mixture, and very useful in colds and affections of the chest; it is usually taken at bed time.

Eggs lightly boiled are nutritive, and easy of digestion, when taken in moderation; but when taken in excess, they cause indigestion and constipation; if long boiled, or otherwise exposed to much heat, they are digested with much more difficulty.

For light cakes, soufflés, and other light puddings, eggs should be quite fresh, but they should not have been laid less than eight or ten hours. When great lightness is required, as for sponge cake, etc., some persons recommend that only half as many whites be employed as yolks, believing that the whites render cakes and puddings heavy; but this will not be the case if the yolks and whites are well beaten separately; it is probable, however, that a cake will become too dry unless some of the whites be omitted.

When eggs are employed for the sole purpose of enriching the mixture with albumen, the yolks and whites need not be separated; in all other cases they should be beaten apart from each other, and the speck should be removed from each egg as soon as it has been broken.

54. *To Whisk or Beat Eggs.*—Whisk the yolks till they appear light, and the whites gently at first, till they form a strong froth, capable of sustaining a half-crown or an egg. So long as any liquid remains at the bottom of the vessel, the whites must be longer beaten. When a portion taken up with the whisk and dropped from it remains standing in points, it is in a proper state for soufflés, etc, and should be mixed with the other ingredients immediately. Some confectioners beat the white of eggs before the fire, to render it lighter; others whisk the eggs and sugar over a slow fire till rather more than new milk-warm; then remove the pan from the fire, and whisk them till cold. These methods may hasten the process a little, but the lightness is likely to be more durable by beating the white of egg over cold water, or even over ice. Hot mixtures do not keep so well as those made cold; they become dry and stale sooner, but they make more biscuits and cakes if properly beaten.

Some recommend the following method:—Eggs should be beaten in a flat-bottomed earthen pan, with wooden rods; keep

the elbow close to the side; let the entire motion be from the wrist, the stroke quick, short, and horizontal, and let the egg beater always reach the bottom of the pan. Do not cease beating as soon as the eggs are in a foam, but persevere till all the bubbles have disappeared, the surface smooth, and the beaten egg as thick as a rich boiled custard. These observations apply to the beating of the whites and yolks together, which may always be done if they have to be afterwards mixed.

(8.) Flavouring or Seasoning.

55. All strong flavours are objectionable to a healthy stomach, unless habit has reconciled it to their use; and we find that those articles of diet which possess the least decided flavour can be relished the longest, and require less frequently to be changed—as bread, potatoes, rice, etc.; those on the contrary, which stimulate the palate most, soon satiate, and cannot be persevered with so long without some change being desired, such as game, beef, mutton, all rich cakes, rich puddings, and highly seasoned dishes. When flavouring or seasoning is used in preparations otherwise insipid, it should be done with great care, as strong provocatives of the appetite are injurious. A slight or subdued flavour, however, such as we find in the various fruits may be imparted with advantage to most culinary preparations. The savours met with in the vegetable kingdom are innumerable, and defy any attempt at classification. Those most worthy of notice in cookery are the sweet, sour or acid, nutty, aromatic, vinous, bitter, acrid or pungent, acerb, saline, and their combinations.

Sweet.—As sugar, treacle, and honey.

Sour.—Acetic acid or vinegar, lemon, verjuice, etc.

Nutty.—Sweet Almonds, cocoa-nut, almond flavour.

Aromatic.—The various spices, as pepper, pimento or allspice, cayenne, nutmeg, cinnamon, cloves, mace, ginger, capsicums,* ketchup, celery.

* The principal varieties of the capsicum are the long red, the Chili, and the bird's eye. They are all used as ingredients in soups, sauces, salads, and pickles; or, when ripe and dried, they are ground to a coarse powder to make cayenne,

Orange and lemon peel, bay and laurel leaves, orange flowers, and chocolate.

Parsley, common thyme, lemon thyme, orange thyme, knotted marjorum, sage, mint, winter-savory, sweet basil, tarragon, tansy, chervil, burnet, fennel, mushrooms.

Acrid or Pungent.—Mustard, horse-radish, cayenne, onions, eschalots, garlic, leeks.

Saline; *Salt.*—About a teaspoonful of salt to a pound of sugar is said to improve the latter (134). Much salt, especially to persons of a gouty habit, is injurious, and assists to form lithate of soda or chalk stones in the joints.

The volatile oil contained in many of the above-mentioned substances stimulates the system, but does not become incorporated with the organism, and is soon ejected, retaining its characteristic odour. Chervil seems to combine the flavours of both parsley and fennel, but is more aromatic and agreeable than either.

To Flavour Milk with Cocoa Nut, etc.

56. Pare off the rind and grate the nut on a fine and very clean grater; add 3 oz. to a quart of milk; raise the temperature gradually, and let the milk simmer very gently for about 45 minutes; then strain it through a very fine sieve or cloth, pressing the milk well from the nut. Milk thus flavoured may be used for blancmange, custards, puddings, light cakes, or bread. The milk contained in the cocoa nut, when sweet, may be added, to obtain which, pierce the end of the nut with a gimlet, draw off the milk, and then break the shell with a hammer.

The rinds of lemons and oranges are best prepared by rasping them on lumps of refined sugar, and then scraping off those parts which have imbibed the flavouring; or the lumps of sugar may be crushed and added to the other ingredients. If the rind be cut very thin, it may be boiled in the milk or other fluid, as may also vanilla pods, cinnamon, mace, and similar substances, from which the fluid should afterwards be strained.

To Blanch and Pound Almonds.

57. Put them into a saucepan with plenty of cold water,

raise the temperature slowly, but just before boiling pour off the water and put the almonds in a basin, peel them and throw them into cold water, dry them with a soft cloth before they are used. If the water be too hot, it will turn them yellow. Before they are pounded they should be spread out and dried for a day or two; they should also be sprinkled during the pounding with a few drops of cold water, or white of egg, or lemon juice, to prevent them oiling. Reduce them in a mortar to a smooth paste.

COOKING PROCESSES.

(1.) Soaking, Steeping, or Macerating.

58. This is the simplest, and, if we except crushing or grinding, was probably the first operation to which grain and other hard food was subjected at an early stage of society, for the purpose of preparing it for mastication and digestion. It is effected by adding cold water, milk, or other fluid to the substances required to be softened, previously to their being boiled, or subjected to other culinary operations. Thus, bread, rice, etc., are soaked for puddings; peas, beans, etc., for soups; and linseed for the purpose of obtaining the mucilage.

Bread soaked by pouring boiling fluid over it, to prepare it for puddings or fritters, is liable to render the preparation sad, in consequence of the starch in the bread becoming dissolved (6); a good soaking in cold fluid is therefore to be preferred. If the bread is not macerated, the ingredients should be well stirred till partially cooked, or they will not mix well; when mixed with eggs the mixture should either be stirred till the albumen sets, or the bread should be soaked to prevent separation. If rice or other light coloured grain be steeped six or seven hours in cold water previously to being cooked, the colour will be much improved. Both grain and meal mix more smoothly, and boil sooner after having been steeped.

As cold water extracts some of the active principles of vegetable substances, care should be taken not to soak them too long, or

after they have been bruised or reduced to powder, unless it be intended to use the fluid for puddings, soups, etc., otherwise the substances macerated will lose a great portion of their nutritive qualities. In some cases, however, this is desirable, as when oatmeal disagrees with a weak stomach; it may then be macerated in cold water, and after standing some time, the water, which will then hold the sugar and albumen in solution, must be rejected.

When cold or hot liquids are poured upon vegetable substances, for the purpose of obtaining their active properties in a fluid state, the resulting liquid is called an *infusion*, as tea, coffee, etc.; when the substances become dissolved in the fluid, it is called a *solution*; and if produced by boiling, it is called a *decoction*, as soup. These terms, however, are seldom used in cookery.

(2.) Simmering.

59. This takes place at the temperature which immediately precedes boiling, and is known by small bubbles forming at the edge of the liquor next the vessel. Many preparations require this gentle boiling, as a state of active ebullition would spoil them by dissipating the volatile principles of the vegetables subjected to the operation. Hence the advantage of simmering soups for a long time, in order to render the contained substances tender, without destroying the aroma and flavour.

The easiest and safest method of simmering sauces, porridge, etc., is by means of a double saucepan (*bain marie*); the inner part, containing the fluid to be simmered, being fixed within the lower or outward part, which contains boiling water; thus situated, the contents of the inner part cannot be made to boil nor be burnt, because as soon as the water in the external vessel reaches 212°, it passes off in steam. If, however, the density of the water in the larger vessel be increased by adding salt, etc., then the water in the inner vessel may be made to boil. The inner vessel should be thin to admit the rapid transmission of heat from the boiling water, and the outer vessel must not be allowed to become dry.

(3.) Boiling.

60. To boil or seethe is to prepare anything by keeping the fluid in which it is immersed in a state of ebullition.

The temperature at which water boils in this latitude is 212° Fahrenheit, and no additional heat can raise it beyond this point, unless sugar, salt, etc. be added to increase its density. Milk boils at 199°; water with one-fifth of its weight of salt boils at 219°; saturated, at 224°; syrup at 221°; linseed oil at 640°; olive oil at 600°. A metal spoon left in a vessel retards the process of boiling, because being a good conductor, it carries off the heat from the water.

Thick liquids, which do not readily permit the escape of steam, or a rapid motion between the particles of the fluid, may be readily heated at the part most exposed to the fire to a much higher degree, whilst those portions not immediately in contact with the heat, are much colder; from this cause they are very apt to be charred and spoiled. To prevent this effect use the *bain marie* (59).

The effect of boiling upon starch is to break or split the grains, and thereby render it more digestible. It also solves the gummy and saccharine parts, and expels wholly or in part, the volatile oils contained in onions, leeks, garlic, etc., and renders them milder in flavour. Boiling also checks fermentation. At the heat of 212° the essential oils and aromatic principles of vegetables are driven off or decomposed; while by infusion in hot water, in covered vessels, they remain in a great measure uninjured. All vegetables, if fresh gathered, may be boiled without the least change in colour, if put into *boiling* water with a few ounces of *salt*, and allowed to boil in *plenty of water*, leaving the vessel uncovered (4.)

When any impurity in the form of scum arises during the process of boiling, as in making soup, it should be carefully removed.

The purposes for which soft water is preferable are mentioned at sec. 4.

The following articles should be put into boiling water:—Asparagus, peas, beans, kidney beans, and all greens; potatoes, turnips, carrots, etc.; puddings, dumplings, etc.

Apple dumplings are lighter when boiled in a net than in a cloth. All vegetables intended for soup should be put into cold water, which should be gradually raised to the boiling point.

TIME REQUIRED FOR BOILING VARIOUS ARTICLES.

			HOURS.
Plum-puddings; puddings enclosing much unstewed fruit, etc.	2	to	6
Haricots, carrots, beet-root, onions, etc., when large; apple-dumplings, currants, gooseberry, and some other fruit puddings.	1	,,	2
			MINUTES.
Artichokes, middling sized roots, tubers, and bulbs, full grown cabbages and savoys	45	to	60
Broccoli, cauliflowers, turnips, middle sized potatoes.	30	,,	45
Broad beans, small carrots, vegetable marrow, small garden turnips, radishes, leeks	20	,,	30
Peas, asparagus, young cabbages, sprouts, French beans, Jerusalem artichokes, young potatoes	10	,,	20
Spinach, turnip greens	5	,,	10
Parsley, eggs	3	,,	5

Sometimes articles are boiled in oil, which exposes them to a much greater heat than when boiled in water. (See Frying). Other precautions necessary to be observed in boiling will be found under the instructions for cooking each kind of food.

(4.) Stewing.

61. To stew is to seethe anything with a slow moist heat; a little butter, water, or other fluid being added when requisite.

It is frequently employed in cooking the following articles:—Apples, pears, plums, vegetable marrows, cucumbers, and other fruit; also onions, celery, spinach, cabbage, mushrooms, carrots, potatoes, cheese, etc. Dr. Gregory says, "The system, so common in England, of boiling food of any kind, in a large quantity of water which is thrown away, is very bad. Vegetables ought to be stewed, with very little water, and the juice eaten with them."

To poach is to boil slightly, and is a term chiefly applied to cooking eggs without the shell.

(5.) Steaming.

62. This is generally effected by placing the articles to be cooked in a vessel over boiling water, the bottom being pierced with holes to admit the steam, and a cover placed upon it. This mode is generally preferred to boiling, for potatoes, puddings, and some other preparations. Nothing should be boiled in the water over which the steamer is placed. A pudding in a mould may be steamed in a common stew-pan, by pouring into the pan a few inches of water, according to the depth of the mould. When the water boils, put in the pudding, and press the cover of the stew-pan closely on; then simmer it gently without ceasing, till the pudding is sufficiently done. The mouth of the mould should be first covered with a well-buttered paper, then tie a thin cloth or muslin over it; care being taken that no part of the paper or cloth touches the water. This is the safer method of boiling all puddings made with polenta, maize, etc.

(6.) Baking.

63. This is a process of heating, drying, and hardening, usually done in an oven, sometimes before the fire, or surrounded by hot ashes.

The term is more generally applicable to pastry and its compounds; as bread in its various forms, cakes, pies, puddings, cheese-cakes, etc. It is sometimes used in cooking apples, potatoes, beet-root, etc., but these articles are more generally said to be roasted; and cheese is said to be toasted, whether alone in an oven or before the fire. When articles are intended to be brown externally, as queen cakes, etc., draw them towards the mouth of the oven when sufficiently coloured. A hot or brisk oven is used for puff and light pastry, light cakes, and raised pies. A moderate oven for apples, pears, large rich cakes, soufflés, biscuits, sponge cakes, Savoy cakes, and little white pastries, which should be only slightly coloured. A slow or gentle oven for gingerbread, (unless of the light thick kind), also for meringues, etc.

(7.) Roasting.

64. To roast is to cook anything by exposing it to heat before a fire; it is applied occasionally to articles cooked in an

oven, as apples, potatoes, onions, or in any other close vessel subjected to a dry heat, as coffee.

(8.) Toasting or Torrefying.

65. To toast is also to expose to a dry heat before the fire, as slices of bread, cheese, etc.; but the term "toasting" applies more especially to the effect of a dry heat on the *surface* of a substance, "roasting" to the general effect of a dry heat on articles having some bulk and thickness. By toasting slices of bread, the modified starch becomes more soluble and a fresh portion of gum is formed.

Bread, whether intended for dry toast, buttered toast, or for toast-water, should be cut about a quarter of an inch thick, and slowly but well heated through, frequently turned and very slightly browned on each side, but in no part of it charred. If toasted too quickly, the outside will be carbonized or burnt, after which, the heat cannot penetrate it; the moisture of the bread which renders it indigestible to weak stomachs, will be retained, and cannot afterwards be evaporated; consequently, if butter be applied, it will be confined to the surface and become oily; if immersed in water, the starch will be dissolved and the water will be less agreeable to the palate, the pleasant and aromatic flavour of toast-water being developed by the action of heat on the starch contained in the bread.

When unfermented brown bread is thus treated, it is a good substitute for biscuits.

To prepare toast-water, pour boiling water on the toast, then cover it up and let it stand to cool.

If bread has become too old and dry, dip it in warm water, toast it as above, and when buttered it will be preferred to other toast.

Muffins should be opened half an inch deep round the edges with a knife, toasted gradually, and when enough, they should be *pulled* open and buttered.

To torrefy or parch is also to heat before the fire or on hot plates, etc. Sometimes farina and grains are torrefied. Wheat flour is slightly torrefied, to make bouillie. It alters the immedi-

ate principles of the farina, gives it a higher flavour, renders it tonic and more easy to digest.

(9.) Frying.

66. To fry is to cook any thing in hot fat, butter, or oil, by which means the surface of the substance is carbonized, and the albumen solidified. Animal fat is of course inadmissible in Vegetarian cookery, and fried articles generally are not so digestible as those cooked by other methods. The butter or oil used for frying should be fresh and free from salt; if rancid or ill tasted, it will spoil the flavour of the article fried, and salt will prevent it being properly browned. Care also should be taken not to ignite the fat. Fine olive oil is the most delicate for frying, but being more expensive than butter, it is not so frequently used. It also requires great care in using it, as it is apt to burn.

If butter is not clarified (48) it is liable to burn, and give out an empyreumatic flavour, owing to the milk it contains.

To fry anything a good colour and crisp, the fire should be very clear, and the butter or oil quite hot, which will be the case when it has ceased hissing, or when it will fry a piece of bread crisp without burning it. Unless the article be sufficiently carbonized immediately after immersion, it will become greasy and lose its flavour. As soon as the surface has become brown, the heat should be reduced; or the pan removed a little off the fire, especially if the article to be cooked be large or thick, otherwise the interior will not be sufficiently done. The butter or oil should be thoroughly drained from articles which have been fried, particularly such as have been dressed with bread crumbs, etc.; this is best done by having a frame of open wire work to fit the pan; otherwise they should be laid upon blotting paper or a cloth. Some articles require to be quite covered with the liquid, that the heat may act on all parts at the same time.

For this purpose an iron vessel, about six or eight inches deep, with a wire work frame, should be half filled with oil or fat, and what remains after each operation should be passed through a clean sieve; it may then be kept in a proper vessel for months.

Others may be done in a *small* quantity of butter or oil, this is called "sautéing" by Soyer. In this manner are cooked pancakes, fritters, omelets, etc.

APPLICATION OF COOKING PROCESSES TO THE PREPARATION OF FRUIT, GRAIN, ETC.

(1.) Fruits.

Many fruits are eaten without undergoing any culinary preparation whatever, but others are improved in flavour, and rendered more digestible, by being baked, stewed, etc.

To Bake or Roast Apples, Pears, and other Fruits.

67. (*a.*) Put apples or pears in a dish, with or without water round them, the stalk end upward; bake them half an hour or more, in a moderate oven; or let them remain all night in a slow oven. Many kinds of pears thus baked are much improved in flavour.

(*b.*) Divide and core apples, lay them on a dish with the flat side downward, with or without sugar under and over them.

(*c.*) Core them without dividing them, fill up the cavities with butter and sugar, and bake them till they are sufficiently tender.

(*d.*) Tomatoes. Cut them in slices, and place them in layers in a flat dish, with plenty of pepper and salt, and a little butter; cover them well with bread crumbs, and bake them in the oven till quite brown.

The apple called in Yorkshire the Green Balsam, is excellent when roasted in a slow oven, and requires no sugar.

To Scald, Codle, or Stew Fruit.

68. When fruits are stewed with a little sugar, for immediate or not very distant use, they are usually called "compotes;" when intended for future use, more sugar and longer cooking are requisite; they are then called "preserves," etc.

Compotes may be formed after several methods, which are here distinguished by the letters *a*, *b*, *c*, etc.

(*a.*) Put the fruit in a stone-jar, with as much sugar as may be thought requisite, and cold water sufficient to cover the fruit. Cover the jar, and place it on a hot hearth, or in a moderately heated oven, or in a saucepan of water over the fire till the fruit is quite tender; or the fruit, sugar, and water may be simmered gently in a stew-pan.

A quarter of a pint of water, and five or six ounces of sugar, will generally be sufficient for a pound or pint of fruit; the compote, however, will be richer in proportion as less water is used. The sugar should be scattered amongst the fruit, but the principal part of it should be placed near the top. Bruised lump sugar should be used for a clear, pale syrup, or when the fruit is intended for dessert; brown sugar when for common use, or when a dark syrup is desired.

After the above method may be stewed any of the hardy fruits, as plums, apples, pears, gooseberries, rhubarb, etc., for general use.

Plums, vegetable-marrow, gooseberries, currants, and rhubarb, require only a very little water to prevent the fruit adhering to the bottom of the vessel. Vegetable-marrow should be peeled, the seeds and fibres removed, and then cut in pieces; gooseberries and currants should be picked clean; rhubarb peeled, and cut into short lengths, but if it be tender and of good quality, it is better not peeled. Currants and raspberries may be used together as follows:—Currants one pint; raspberries or strawberries half a pint; sugar four ounces.

Apples and pears should be previously pared,* cored, and put into the jar, either whole, divided, or sliced; the peels and cores may be boiled, and the water strained from them, and then used for stewing the fruit.

"Norfolk-biffins," and other dried apples, should be soaked in cold water for five or six hours before they are put into the jar. A dozen apples will require about a pint of water, and eight ounces of sugar. They should simmer gently for three or four hours, or until they are soft. Season with a few cloves, or cinna-

* Apples and pears should be pared and cut with a silver knife, or immediately after being cut they should be thrown into cold water, to prevent them changing colour.

mon, or lemon peel. The addition of a little red beet will improve the colour, and some consider the flavour improved by a little port wine.*

Pears, stuck with a few cloves, may be put into the jar, either with plain water, or with water, in which the peels and cores of either apples or pears have been boiled and strained; add the juice of a lemon, the peel cut in shreds, and a little red beet, and then stew till the fruit is tender. Drain the liquid from the pears, and to each half pint add from four to eight ounces of sugar, and when a syrup has been formed by simmering, pour it over the pears, and let them stew an hour or two, or till sufficiently soft. When intended to be kept long, more sugar must be used.

Baking or stewing pears, or other hard pears, are fittest for this purpose. Some prefer treacle and sugar in equal quantities, and add a little port wine.

(*b.*) Add five or six ounces of sugar to a quarter or half a pint of water, according to the quantity of juice contained in the fruit; let the sugar and water simmer about ten minutes, skim the syrup, and add to it a pint or pound of fruit, previously prepared; let the whole simmer till the fruit is tender.

Ripe currants will require five or six minutes; green gooseberries, rhubarb, apples in halves, etc., eight or ten minutes; plums, apricots, peaches, and nectarines when divided, two to five minutes; whole, ten to twenty minutes. If the syrup be too thin, drain it from the fruit, reduce it by simmering, and when cold, pour it over the fruit.

The fruit may be served in the syrup, with bread or with rice, sago, etc., which may be stewed along with the fruit, the rice having been previously boiled, and the sago simmered five or ten minutes.

Lemon peel is sometimes grated over the fruit; or the peel in thin shreds is first scalded, and then added.

(*c.*) Take half a pint of syrup, consisting of sixteen ounces of sugar, and half a pint of water; when it is near the boiling point, put in six greengages, or other plums cut in two; let them remain in the syrup while it simmers two minutes; remove them

* It is better to avoid the addition of wine in this and other receipts where it is mentioned, unless particularly requested.

and drain them on a sieve: add six more plums to the syrup for two minutes, remove them and drain them as before; remove the skins, and put the fruit in a basin; then reduce the syrup till rather thick, and when cold, pour it over the fruit, which will then be ready to be served.

Other fruit may be treated in the same way. Peaches and apricots, when green, should be previously put into boiling water, and boiled ten minutes, then drained and stewed in the syrup till tender.

Cherries need not be divided; cut the stalks short and stew two or three minutes.

(*d.*) Cut apples in small cubical pieces, strew 12 oz. of sugar over 16 oz. of fruit, also several long strips of lemon peel, and cover them up close in a bowl. Next day put the apples piece by piece into a small stew-pan with three or four table-spoonfuls of cider or perry, and simmer gently till the fruit becomes clear; then remove it, and when cold, build a wall round a small dish with the square pieces, place the strips of lemon peel on the top, and pour the syrup into the middle. Rhubarb or carrots may be used in the same way.

(*e.*) Apples may be stewed with butter thus: Pare six or eight fine apples, core them without piercing them through, or dividing them; fill the cavities with fresh butter, and put four ounces more, cut small, into a stew-pan just large enough to contain the apples in a single layer; place them closely together and stew them very gradually, turning them occasionally; when nearly tender, strew upon them as much sifted sugar as will be sufficient, and a tea-spoonful of powdered cinnamon, and stew for a few minutes longer. Put in or upon each apple a little apricot jam: pour the syrup from the pan around, but not upon the fruit. Apples thus prepared are called by the French *Pommes au Beurre.*

(*f.*) After stewing fruit in water, remove it before it becomes quite soft or pulpy; then add to the liquid one-third of the sugar intended to be used, let it simmer ten minutes, skimming it well during the time; then pour it over the fruit, *hot* if you wish the fruit to be soft, but *cold* if the fruit is to be crisp (78 *c*). On the following day, strain off the syrup and add to it another third of the sugar; simmer and skim as before, then pour

the syrup again over the fruit *hot* or *cold* as before. Repeat the process on the following day, adding the remaining sugar. If it is intended to keep the fruit during many months, more sugar must be employed than for compotes, because a weak syrup has a tendency to ferment, and quickly becomes acid if kept at a moderate temperature, but a concentrated solution of sugar prevents the spontaneous decomposition of organic matters boiled in it.

When fruit has been lightly stewed in syrup, it may be taken out and allowed to stand a few days; boil the syrup again, pour it over the fruit, and allow it to stand a day or two longer; then drain off the syrup, and lay the fruit on dishes or tins to dry in a cool place. The syrup may be used for pies or puddings.

(2.) Syrup.

69. As syrup is much used for preserving plums, melons, cucumbers, etc., a few remarks respecting it will not be here out of place.

Sugar.—Coarse sugar may be used when intended for common use, or when a dark syrup is required; but lump sugar or fine crystals when intended for dessert, or when a clear pale syrup is preferred.

Syrup prepared with the best refined sugar is also less liable to spontaneous decomposition. The transparency of the syrup will be promoted by using the sugar in a single lump, taken from the bottom or broad end of the loaf; if it be powdered or bruised, the syrup will be cloudy.

Two pounds of sugar and a pint of water form a syrup which neither ferments nor crystallizes; but twelve ounces of sugar, a pint of water, and a pound of fruit will answer very well, and keep for a month or two. When the fruit contains much juice, less water should be used.

Water.—When a very clear syrup is wanted, use distilled water or filtered soft water, as the lime contained in hard water would be deposited by boiling, and destroy the transparency. A syrup with a very slight excess of water keeps better than one fully saturated.

Heat.—In forming the syrup, employ as little heat as possible,

for a solution of sugar, even when kept at the temperature of boiling water, undergoes slow decomposition. Pour the water cold on the sugar, and let them stand a few hours, occasionally stirring the solution; then apply a gentle heat, that of steam or a water bath is preferable. A syrup should not *boil* but *simmer*, and the simmering should be checked after the lapse of one or two minutes. If it be requisite to thicken a syrup by boiling, a few fragments of glass should be introduced, as boiling takes place at a lower temperature when these are present.

A syrup has simmered sufficiently, if when taken up in a spoon it pours out like oil; and when a thin skin appears on blowing upon the syrup it is considered completely saturated. When nearly cold, the syrup may be strained through flannel; and when not sufficiently transparent it may be clarified when cool by stirring in the whites of eggs; renew the heat, skim the syrup well, and strain it when cold.

(3.) To Cook Vegetable Marrow, Cucumbers, and Pumpkins.

70. The gourd tribe may be cooked in various ways, but vegetable marrow and cucumbers are the only sorts much used in this country in a cooked state.

(*a.*) Peel vegetable marrow, cut it into small portions, and stew it after any of the preceding methods; but it is usually boiled and served like sea-kale. Choose the marrow when about six inches long, and before it becomes too old and seedy. Put it in boiling water with a little salt in it, boil it till tender, then pare it, cut it in halves lengthwise, and serve it on toast with butter sauce or white sauce. It should not be pricked while boiling, and when the skin can be rubbed off the marrow is ready.

(*b.*) After boiling and peeling it, slice it lengthwise about three-quarters of an inch thick; remove the seeds, drain or dry it well, season it with pepper and salt, and leave it till cold; then dip each piece in batter, or in egg and fine crumbs of bread, and fry it. Serve it with crisped parsley and brown sauce, or with fried onion. Thus prepared, it may be used cold between slices of bread as a sandwich.

(*c.*) After vegetable marrow has been boiled, pared, and drained,

it may be cut into dice and re-heated in good white sauce, or stewed tender in butter. Or, pour a cupful of white sauce over it, after it has been laid upon some sliced cheese in a well-buttered dish; add another layer of sliced cheese, and strew bread crumbs over it, then put it in a moderate oven for about ten or fifteen minutes. Boiled marrow may also be mashed as turnips, or made into puddings, pies, etc., like other fruit. Moderate sized marrows will require boiling from twenty to thirty minutes; large ones from forty-five to sixty minutes.

A cucumber or marrow may also be baked thus; pare and cut it in halves as above; remove the seeds and fibres; rub it inside and out with a little salt, and let it drain for an hour. Fill up the halves with onions previously boiled and chopped with some sage; add a little butter, pepper, and salt; then tie the two halves together and bake in a buttered dish, in a moderately heated oven. If not well-browned, dredge a little flour over, brown it before the fire, and serve with brown sauce. Force meat may be substituted for the onions and sage, and when sufficiently baked, throw over it peas, stewed with an onion and a sprig of mint, and thicken with a little butter and flour. The onion and mint should be removed after stewing.

(*e.*) Peel a pumpkin, cucumber, or vegetable marrow; cut it into thin slices, removing the seeds; set it, with some dried currants and sugar, in a saucepan over the fire; little or no water is required. Stew it about three hours or till quite tender, and put it in a crust as for mince pies; or cover a shallow dish with a thin crust and spread the mashed fruit and currants upon it; cover it with a crust and bake. Candied lemon or orange peel may be added.

(*f.*) Stew the pumpkin, cucumber or marrow with a little sugar and a few cut apples; add a little lemon juice and rind with two or three cloves, and bake as above.

TO PRESERVE FRUIT FOR FUTURE USE.

Introductory Observations.

71. All fruits and vegetables intended for preservation should be free from bruise and blemish, as injured fruits soon

decay and spoil the sound fruit in contact with them; they should be gathered on a fine dry day, free from morning or evening dew, and before they are quite ripe. Such as have a bloom upon them should not be wiped, unless necessary to remove dust or other impurities, and the process of preserving should be commenced on the day the fruit are taken.

The fruit room should be dry, of a low and equal temperature, and excluded as much as possible from the light.

The conditions more or less necessary for the *spontaneous decomposition* of vegetable substances are moisture, atmospheric air or oxygen, and a temperature between the freezing and boiling points of water.

Substances which contain no nitrogen, such as pure sugar, starch, gum, oil, etc., will not ferment or decay.

All nitrogenous compounds, under favourable circumstances, not only undergo rapid fermentation themselves, but have the power of disturbing the elements of non-nitrogenous bodies with which they are in contact.

1. Organic substances, when perfectly dry, are incapable of decomposition at the ordinary temperature of the atmosphere; hence fruit may be preserved by desiccation or abstraction of the moisture; as figs, dates, grapes, and plums: the two latter being converted by drying into raisins and prunes.

2. The presence of atmospheric air or oxygen facilitates putrefaction, hence the advantage of bottling fruit, first rarefying or driving off the air by heat, and then corking the bottles tightly, etc. (74).

Though putrefaction cannot take place if air be *thoroughly* excluded, yet the smallest quantity of oxygen present is sufficient to produce a commencement of putrefaction, and after the process has commenced, it proceeds whether air be present or not.

3. A certain temperature is always requisite for the decomposition of organic bodies; consequently, they may be preserved by keeping them constantly below the freezing point.

4. Fermentation and chemical changes may also be prevented by certain antiseptic substances, as sugar, vinegar, salt, charcoal, chlorine gas, etc.; thus are formed preserves, jams, fruit-moulds, jellies, pickles, etc.

(1.) To Dry Fruit without Sugar.

72. The pulpy fruits, such as gooseberries nearly ripe, cherries, etc., should be spread, without contact with each other, on sieves, tins, or dishes, and dried in the sun, or before the fire; they may be placed occasionally in a cool oven. Change the dishes daily, and place cherries with the stalks upward. Kentish cherries are considered best for this purpose, but morellas answer very well.

Damsons should be dried gradually, by placing them in a cool oven, on tins or dishes, covered with thin coarse cloths. When sufficiently dried, damsons, cherries, etc., should be put in boxes, with white paper between the layers of fruit, and protected as much as possible from the air.

Apples and pears should be placed in an oven at a low temperature, six or seven times, and allowed to remain in the oven several hours each time. The oven should be very cool at the commencement.

Flatten the apples by pressure, gently and gradually applied, so as not to break the skins. When required for use they should be stewed for an hour or more with a little water and sugar. The "Norfolk Biffins," Minchall crabs, or any tart apples or hard pears, are the best for drying.

Apples pared and cut in small pieces as soon as gathered, and then thoroughly dried in the sun, may be kept for several years.

The art of preserving all kinds of vegetables, by drying them in chambers, through which currents of heated air pass, has been brought to great perfection in France. When thus preserved they appear dry and shrivelled up, like strips of thick parchment or leather, but when cooked they swell out to their usual size.

Peas, beans, kidney beans, cabbages, cauliflowers, beet, carrots, etc., may be preserved by first boiling them till tender, and then drying them in a warm airy place, when they may be kept for a considerable time in bags or boxes. Beet, carrots, and other roots should be cut in slices.

(2.) To Store or Preserve Fruit by Excluding the Air.

73. Some kinds of fruit require more protection from air and light than others. Apples and winter-pears should be kept

in boxes, casks, or a cool, dry room, with dry coarse cloths, fern, chaff, oat-husks, or dry sand between the layers; or each apple may be folded in paper, and packed rather close. Cover the whole well over with any of these articles, so as to exclude air and light as much as possible. When the atmospheric air cannot be completely excluded from fruits, they should not be put in drawers or other close places, as the want of free ventilation will facilitate their decay.

To Bottle Fruit.

74. Gather the fruit when very dry, if possible while the sun is upon it, and bottle it on the same day. Be careful not to bruise it while picking or dressing it, and reject all that is not sound. Currants should be stripped from their stalks with a fork; rhubarb pared and cut into short lengths.

Kidney beans in the green state, should be cleared from the strings or strong fibres, and when large they should be cut lengthwise into two or three pieces. Previously to using the bottled beans, scald them in water with a little salt, and let them simmer till tender.

The bottles should be sound, very clean, dry, and with wide necks. They should also be well fitted with good corks.

Fill the bottles with the fruit, and whilst filling, shake them gently, and cork them very lightly. Put them in a pan of cold water, with a little hay at the bottom; set the pan on the fire and raise the temperature of the water very gradually to 160°, and keep it at this point or below 170°, for twenty or thirty minutes.* As the fruit will shrink, fill up each bottle, as far as the bottom of the neck, with fruit from one of the other bottles, taking care, while doing so, not to bruise the fruit. When as many bottles have been thus filled as there is sufficient fruit for, remove the pan from the fire, and take out each bottle separately, fill it to within an inch of where the cork will reach, with boiling water; cork it well immediately, shaking it as little as possible; tie down the cork and cover it well with melted resin or wax, and return each bottle as it is finished to the pan of water, where it

* The heat coagulates the albumen (13), and otherwise retards fermentation.

must remain till the water has become gradually cold. Place the bottles on their sides in a cool, dry place; turn them partially round once or twice a week during the first month or two, and once or twice a month for some time afterwards. Green peas may be bottled in the same way.

(*a.*) MAYET, a French chemist, says the temperature of fruits or their juices in bottles, etc., should be raised to 184°, which he found by his researches sufficient to destroy their ferment. Some raise the temperature of the water in which the bottles are placed to 170°, and keep it at this point for an hour; others allow the water to simmer, and then immediately remove the bottles if the fruit is ripe, but leave them in ten minutes longer if it is green.

(*b.*) Mr. LOVEJOY, who produced beautiful specimens of preserved fruit before the Horticultural Society, proceeds as follows:—Pick the fruit from the stalks; put them into the bottles. Put one drachm of alum into four gallons of boiling water; let it stand till it is cold. Then fill the bottles; bung them tight; then put them into a copper of cold water, and heat it to 176°. Then tie them over with a bladder and seal them. The raspberries and mulberries preserved in this manner were as plump and transparent as when first gathered. The other fruit was equally fine. The quantity of alum must not be increased, or the fruit will be hard.

(*c.*) Some cork the bottles *well* immediately after putting in the fruit, without any water; they then put them in a pan of cold water, heat the latter till it simmers, and let the bottles remain in it till the fruit shrinks when it is unripe, or till the juice of the fruit has boiled up. They also recommend that fruit or vegetables, or their juices, should boil three or four hours if they will bear it; then remove the pan from the fire, and allow the bottles to cool as above. The small amount of oxygen contained in the bottles becomes absorbed, and fermentation is prevented. Some, again, advise that 2 to 6 oz. of sugar should be added to each quart bottle, when ripe fruit is used, and sufficient sugar to sweeten it when the fruit is green. In the latter case they fill up the bottles with water, but not when the fruit is ripe; thus preserved, they require no additional sugar when used for pies, etc.

Jars of fruit may be treated in the same way, using 6 oz. of sugar for plums, etc. Much sugar, however, tends to destroy the natural flavour of the fruit. Ripe currants and raspberries may be bottled together.

While corking the bottles, set them on double flannel dipped in hot water; if placed on a cold surface, or exposed to a current of cold air, the sudden change of temperature may break them. If the corks are fastened down with wire or twine it will prevent them flying; then dip the top of each bottle in melted resin, and, as only a thin coating will be taken while the bottle is hot, dip it a second time when it is cold.

When the bottles are laid on their sides, the water should cover the fruit.

Use long corks, not bungs, as the latter are cut the wrong way of the cork, and will admit air; choose them of a good colour and texture. Scald them, and let the water become almost cold, drain off the water and scald them again with clean water, let them stand for an hour, remove them from the water and put them in a sieve for two days to dry. Some pour melted fat upon the fruit in the bottles to the thickness of a penny-piece just before they are corked. When the bottles are opened, the fat is removed with a spoon. When you put in the cork, squeeze it as small as possible, drive it down one inch into the bottle, cut the cork even with the mouth of the bottle.

Instead of corking the bottles, some prefer pouring a little olive oil on the water to secure the fruit from the access of air, in which case the bottles must be stored in an upright position.

When about to use the fruit pour off the greater part of the water, if no sugar has been used, and add sugar as for fresh fruit. The liquor poured from the fruit will form a good syrup when boiled with sugar.

Cranberries need only be put into clean bottles or jars, which should be filled up with cold water, previously boiled, cork or cover them closely. When about to use the berries, stew them lightly in a little of the water in which they have been kept, adding a little sugar. All fruits, however, when bottled with cold water, eat rather hard, even after they have been well stewed; it is advisable in this case to bruise them well whilst being stewed.

(3.) To Preserve Fruit by Keeping it at a Very Low Temperature.

75. If vegetable substances be exposed to a degree of cold below the freezing point of water, the juices will be congealed and converted into ice, and during this state they cannot undergo any change whatever; hence freezing becomes a very simple and effectual mode of preserving food in many cases. Several plans have been suggested for this purpose, but few families would find it convenient to adopt them.

(4.) To Preserve Fruits and other Vegetable Substances with Sugar, Salt, and Vinegar.

General Observations.

76. Enamelled stew-pans are best adapted for preserving and pickling, as they are not acted on by acids, and the colour of the fruit is not affected by them.

Wooden or silver spoons and skimmers should be employed, as pewter, iron, or tin endangers the colour of the fruit. All sieves, strainers, and other vessels should be very clean, as the least inattention in this respect might destroy the flavour.

Preserves and pickles should be kept in a very dry and cool place.

Do not allow the preserving pan to be in immediate contact with the fire; suspend it over the fire, or let it rest on a trivet or other protector.

All preserves should be well skimmed, and *constantly* stirred, gently at first, and more quickly afterwards; a slight neglect in these respects may spoil the whole.

Unripe fruits, and such as contain little juice, should be simmered gently, till tender, in water or a thin syrup (69), and the syrup to be poured upon them should at each boiling be strengthened by the addition of more sugar. Ripe fruits, or such as contain much juice, require no water; they should be simmered with one-third of the sugar you intend to employ, and the syrup thus obtained should be enriched with the remaining sugar, as above.

It is usual to add a pint of water and a pound of sugar to each pound of fruit, one third of the sugar being added at each boiling, but it is desirable to use no more water than the fruit requires. The sugar may vary from eight ounces to two pounds, but the natural flavour of the fruit is obscured by an excess of sugar.

Unless the syrup be thin at first and the fruit soft, the latter will not absorb the sugar, nor become clear and plump.

Preserves and jams, when sufficiently boiled, should be put into clean, dry jars, covered with tissue paper rubbed over slightly with pure olive oil, or dipped in brandy or white of egg, and then protected by one or two pieces of bladder, paper, or sheet gutta percha, so as to exclude the air as much as possible. They should be kept in a *very dry and cool* place. The bladder should be soaked in water for two days, and its *internal or smooth* surface should be placed upwards. The tissue paper should be cut larger than the opening of the jar, well smeared with white of egg, and pressed well down at the sides.

They will ferment and become mity if not sufficiently boiled, or if kept in too warm a place; and they are apt to become candied if boiled too quickly or too long. If they are not kept in a dry place, or have not been sufficiently boiled, they will probably become mouldy.

They should be occasionally examined, and when slight fermentation appears, the syrup should be re-boiled for a few minutes and well skimmed; the fruit also should be well scalded in it; the whole should then be secured in clean jars, as above.

For common preserves, coarse sugar may be used, but well refined loaf sugar, or fine crystallized sugar, should be generally preferred, as there is less scum and waste from the finer sugars. All the coarse sugars contain acari and other impurities, and on this account the well refined sugars are most economical.

FRUITS PRESERVED WITH SUGAR.

77. The term Preserves is sometimes applied to fruits boiled with sugar in any condition, but it will be convenient to arrange

them under the four following heads:—1. Preserves; 2. Jams and Marmalades; 3. Moulded Pulp or Fruit Moulds; 4. Jellies.

(1.) Preserves.

73. Preserves proper are fruits or other vegetables protected by sugar or syrup, either entire, or, if divided, not mashed or reduced to pulp.

They may be boiled or potted in the syrup, or they may be removed from the syrup and dried on sieves or dishes in the sun, or in a very moderate oven, with a little powdered sugar sprinkled over them every time they are turned.

(*a.*) Having prepared the fruit, put it carefully in wide-mouthed bottles; sprinkle the sugar in with the fruit, reserving a rather larger portion for the top (68); put the bottles in a pan of cold water; gradually raise the temperature; simmer half an hour; fill up the bottles from each other, and complete the process as for bottled fruit (74).

Ripe currants, strawberries, and raspberries, may be thus preserved, eight ounces of sugar being added to a pound of fruit.

(*b.*) Form a syrup (69) with from twelve ounces to two pounds of sugar and a pint of water; a lemon cut in slices, and the peel of such fruit as pines may be simmered about five minutes in it. Strain, and when the syrup is cold, add the fruit, if large, in thin slices; simmer till the fruit is tender, or till a wooden skewer easily penetrates it. Put the fruit and syrup in jars, as directed (76). It is better to add only one-third of the sugar at first, and the remaining portions as directed in method *c*.

(*c.*) Sprinkle one-third of the sugar over the fruit, and let it stand from one to three days, or until sufficient juice has been extracted; if the fruit yields little juice add a little water. Put the syrup and fruit carefully into a preserving pan, heat them gradually over the fire, and simmer them gently ten minutes; remove the pan from the fire, and with a wooden spoon take out the fruit and put it into a bowl; add another third of the sugar to the syrup, and simmer it five or ten minutes, skim it well and

pour it over the fruit, * and let it stand till next day. Again remove the fruit, add the remaining third of the sugar to the syrup, let it simmer for five or ten minutes, then pour it over the fruit and put it with the syrup in jars, as directed (76), or drain and dry the fruit, as at 78.

(*d.*) Put the fruit in stone jars, sprinkle over it one-third of the sugar; put the jars in a boiler of cold water; let the water simmer gently till a syrup has been obtained, and allow the fruit to stand in it till next day; then drain off the syrup, and add to it another third of the sugar; simmer it ten minutes, and skim it well, then pour it over the fruit; continue the process with the remaining third of the sugar till the fruit is clear; then put it in small jars and cover them (76).

(*e.*) Take half as much more fruit as finely powdered sugar; put one third of the fruit (the ripest and most bruised) in a jar; sprinkle over it one-sixth of the sugar, and place it in a moderately heated oven, or over the fire, until the juice has been extracted, which drain from the fruit, and the remaining pulp may be used for pies, puddings, or jams, by adding to it a few red currants or rhubarb, and more sugar. When red currant juice can be obtained, it may be used instead of that of the fruit to be preserved. Heat the remaining sugar on a dish in the oven, add one half of it to the juice when near the boiling point; simmer the whole for a few minutes, or until it has become clear by skimming. Then take it from the fire, and carefully add the reserved fruit; sprinkle over it the remaining sugar; simmer the whole for twenty minutes, but very gently, lest you break the fruit. Take out the fruit carefully with a slice, and put the most entire in a jar; simmer the syrup from three to five minutes longer; pour it over the fruit, and let it stand till cold, then cover it (76).

If the preserve does not set well, drain off the juice, boil it, and then pour it over the fruit.

Thus are prepared strawberries, raspberries, and other juicy and delicate fruits.

* When you wish the fruit to be green and firm, let the syrup stand till it is *cold* before you pour it over the fruit, in all other cases pour it over while *hot* (68*f*).

(*f.*) Boil two quarts of amber gooseberries in two quarts of water till the juice has been well extracted; strain and add two pounds of fine sugar to two pints of the liquor; let it boil five minutes, and skim it till clear. Remove it from the fire, and add carefully two pounds of raspberries; let them just boil up; then sprinkle over them a pound and a half of sugar previously heated in the oven; boil them very fast for eight minutes, skimming them well. Remove them from the fire, let them stand till nearly cold, then put them in pots.

Strawberries may be preserved in the same way.

(*g.*) For each pound of fruit, take half a pound of sugar, and put the latter in a pan with a little water; when the sugar is hot take up the fruit in a skimmer, dip it in the sugar and hold it there about half a minute; then remove it and spread it on tins, continuing the process till all the fruit is finished. Boil down the sugar to a thick syrup, and pour it over the fruit. Set the tins before the sun, or in a warm oven, till the fruit has been dried into gelatinous cakes. When thoroughly dry, put the cakes in a bag and hang it in a dry place. The cakes will keep a long time and may be used at any time by adding a little hot water for a few minutes; more sugar may be added, if necessary. The flavour of the fruit is preserved by this method, which answers well for strawberries, raspberries, blackberries, etc.

(*h.*) Boil to a thick syrup, one pound of refined sugar, and a quarter of a pint of water for each pound of fruit. When cold, put in the strawberries, and let them stand a night. Drain them, and boil the syrup up again three times, which will thicken it. Put the strawberries into the syrup each time when it is cold. When finished, put them in glasses, over which tie paper, and set them in a cold place.

To Preserve Ripe Currants.

79. Remove them carefully from the stalks, and proceed according to method *a*, using eight ounces of sugar to a pound of fruit.

Ripe Gooseberries.

80. These may be preserved either with or without the seeds. Boil them till clear and tender, in a syrup formed in the propor-

tion of a pound of sugar to a pint of water; or in a syrup in which cherries or other fruits have been boiled for drying; put them into the syrup when it is cold, heat them gradually, and proceed as directed for cherries (82). For very clear syrup, use soft water (69).

Green Gooseberries.

81. Take them when fully grown, cut off the tops, but not the stalks; split the gooseberries half way down and remove the seeds. Simmer a pound and a half of sugar in a pint of water; skim and add one pound of gooseberries; simmer them from five to seven minutes, or till clear and tender; lift them out of the syrup and add more gooseberries to it. Drain them when sufficiently done; dry them gradually (78); or keep them in the syrup, and dry them when they are wanted.

Cherries.

82. Stone them, and add eight ounces of sugar to sixteen ounces of cherries; let them stand two days in the syrup; simmer them ten minutes, then let them stand two or three days longer; drain off the syrup and dry the cherries separately on sieves or dishes (78). When more sugar is used, put the cherries in the syrup, and dry them at any time, but the flavour will be better preserved by drying them within a fortnight after they have been boiled.

Siberian Crabs.

83. Rub them with a dry flannel, taking care not to break the skin. Prick them well with a needle to prevent their bursting. Simmer a pound of sugar in a pint of water, then put in the fruit, and simmer it till the skin begins to crack slightly; take out the crabs and drain them separately on a dish. Simmer the syrup again, and if not strong enough add more sugar; when cold, pour it over the fruit and put in jars (76).

Damsons, Wine Sours, and other Ripe Plums.

84. Prick them with a needle and slit the skin of the hardier kinds at the seam. Proceed according to method *d*, using three-

quarters of a pound of sugar to a pound of fruit. Greengages are sometimes boiled in clear gooseberry juice—two pounds of the juice to one pound of fruit.

Apricots, Peaches, Nectarines.

85. Let the fruit be fine and sound, but not too ripe. Pare, stone, and cut them in halves and weigh them. Lay them on a dish, the hollow part upwards; take their weight of fine loaf sugar pounded, strew one-third of it over the fruit and proceed by method *c*. Apples pared, cored, and cut in quarters or less portions may be preserved in the same way. A little essence of ginger may be added before the apples are put in the jars.

Pineapples, Vegetable Marrows, etc.

86. Take off the top and bottom of the pine and remove the rind. Form a syrup with a pint of water, two pounds of sugar, one lemon cut in slices, and the peel of the pine; proceed according to method *b*.

Raspberries, Strawberries.

87. Proceed according to method *e* or *f*.

Fruit nine pounds, sugar six pounds. Heat three pounds of fruit and one pound of sugar together; add two and a half pounds of sugar to the juice, then six pounds of fruit, and the remaining two and a half pounds of sugar.

Rhubarb.

88. (*a*.) Take it whilst young and tender; peel and cut it into lengths of one or two inches. For every pound of rhubarb take a pint of water and three-quarters of a pound of sugar; add one-third of the sugar to the water, put in the rhubarb, and simmer it twenty minutes or till tender, but not pulpy; remove the rhubarb into a bowl, and complete the process as directed in method *c*, always allowing the syrup to stand till cold before it is poured over the rhubarb.

(*b*.) Cut the rhubarb as for tarts, and to every quart sprinkle one pound of sugar; let the whole stand twenty-four hours, or

until the juice has been extracted. The sugar will sink without being dissolved. Boil the juice and sugar together for twenty minutes after simmering has commenced; then add the rhubarb, and boil the whole twenty minutes longer. The preserve need not be stirred, if boiled slowly. The rhubarb and sugar do not require a warm place to draw out the juice.

Green Apricots.

89. Select them just before they are ripe, arrange them in a pan in layers, with plenty of vine or spinach leaves under, over, and between them; fill the pan with spring water and cover it up close. Heat the water very gradually, and keep it at a moderate heat for several hours, or until the fruit becomes tender, but not cracked; then remove the fruit very carefully. Make a thin syrup with some of the water, using one pound of sugar to a pint and a half of water; when *cold*, pour it on the fruit and complete the operation by 78 *c*.

If the fruit be not green enough, a small piece of alum may be boiled in the syrup.

Preserves with Sugar and Ginger.

Cucumbers, Melons, Vegetable Marrow, and Lettuce Stalks.

90. Choose cucumbers of a middle size, green, and as free as possible from seeds. Put them in a jar with a strong solution of salt in water; cover them with a cabbage leaf to keep them down, and tie paper over the top. Set the jar in a warm oven till the cucumbers become yellow; wash them and set them over the fire in fresh water with a little salt in it, and place a fresh cabbage leaf over them; cover the pan very close, but take care the water does not boil. If the cucumbers are not sufficiently green, change the water, cover and heat as before; or add a little alum, vine leaves, parsley, or spinach, or the juice of the latter. When of a good colour, let them stand till cold; put them in cold spring water for two days, changing the water twice a day to remove the salt; they will then be ready for the syrup. They may also be cut in two, and the seeds and pulp removed.

When lettuces are running to seed, take the stalks while

tender, and when about sixteen or eighteen inches high, peel them and cut them into lengths of from one to three inches; put them in spring water, changing it daily for six days, or until the stalks are very clear. Remove all remaining strings or fibres, and boil the stalks for a few minutes in spring water, but not till they are soft.

For every pound of fruit take a pint of water, a pound of sugar, and an ounce of good white ginger previously soaked and scraped; boil and skim the syrup till clear. (It is better to add only one-third of the sugar at first, and the remainder by degrees at each boiling.) While the syrup is boiling, add the rind of one lemon pared very thin and cut in shreds. When the syrup is clear, remove it from the fire, and when *cold*, pour it over the cucumbers, lettuce-stalks, etc., having first dried them with a cloth. Let the whole stand a day or two, then draw off the syrup, bring it to the boiling point, having added another third of the sugar, skim it well, and when *cold*, pour it over the fruit again. There should be sufficient syrup to cover the fruit. Repeat the operation on alternate days for a fortnight or more, occasionally adding a little more sugar, and if not sufficiently strong of ginger, add a little essence of ginger before pouring the syrup on the fruit for the last time. The juice of a lemon may be added to the syrup previously to completing the last boiling.

(2.) Jams and Marmalades.

91. These differ little from Preserves properly so called. *Jams* are generally made of the more juicy berries reduced to a pulp; *Marmalades* of the more solid fruits, or the rinds of oranges, etc. The fruit should be free from dirt, skins, stalks, and stones. Ripe and juicy fruits should be rather bruised, put into the preserving pan and boiled rapidly till well reduced, before the sugar is added. When the sugar has been added, boil the whole quickly, but do not allow it to become too thick, or the sugar will remain undissolved, and the impurities will not rise to the top. Rich juice should be carefully watched as it falls from the skimmer, lest it become too thick. When fruit contains little juice, as unripe currants, bruise a portion of it, then add a little sugar,

place the pan over a gentle fire, and when sufficient juice has been obtained to prevent the fruit burning, add the remainder. All jams should be well stirred and skimmed.

The sugar should be made as hot as possible, without being browned, before it is added to the fruit. For common jams and jellies coarse sugar may be used, but well refined loaf sugar or crystallized sugar should be preferred generally, as there is much less impurity and waste from the finer sugars (69).

To stone-fruit the blanched kernels of the whole or of part may be added, two or three minutes before the pan is removed from the fire.

Currant juice, red or white, in the proportion of one-fourth of the weight of the jam, is an improvement to strawberries; it may also be added to raspberries. The pulp and juice of ripe gooseberries, after being strained, may be mixed with raspberry juice; or the raspberries and gooseberries may be boiled together.

The following are approved mixtures:—

Raspberries and Gooseberries.

(*a.*) Take equal quantities of each, and boil the gooseberries well before the raspberries are added.

Raspberries and Rhubarb.

(*b.*) Boil three pounds of rhubarb twenty minutes, then add one pound of raspberries and three pounds of sugar. Or rhubarb two pounds; raspberries half a pound; sugar one pound and three quarters.

Raspberries and Apples, or Vegetable Marrow.

(*c.*) Apples or vegetable marrow three pounds; raspberries one pound.

Raspberries, Black Currants, and Rhubarb.

(*d.*) Raspberries one pound; black currants one pound; rhubarb two pounds. This mixture makes an excellent preserve.

Blackberries or Brambleberries, and Apples.

(*e.*) Juice of blackberries two quarts; cut apples six pounds;

crushed lump sugar one pound. Stew in the usual way till the apples are softened down and the mass becomes of the usual thickness.

(*f.*) Or boil the brambleberries and apples separately; stir the apples to the clarified sugar while hot, then add the brambleberries; add also the juice and grated rind of a lemon, and boil the whole from five to ten minutes. Brambleberries three pounds; apples one pound; clarified sugar two and a half pounds.

Vegetable Marrow.

(*g.*) Peel it and take out the seeds and fibres, and cut the fruit in pieces. To each pound of marrow add one pound of loaf sugar and the juice of a lemon. Let it boil half an hour, then pour it into pots.

Red or White Currants.

(*h.*) Fruit four pounds; sugar three pounds; when at the boiling point, let the preserve continue to boil for eight minutes quickly. The pan should be only two-thirds full, or the fruit will boil over. When more sugar is added, the fruit should only boil seven minutes.

Fruit will keep better if boiled longer, than recommended in this receipt, but both the colour and flavour will be injured.

Green Gooseberries.

(*i.*) Weigh and bruise them slightly, boil them six or seven minutes; to every three pounds of fruit add two and a half pounds of sugar in powder, then boil quickly three-quarters of an hour.

92. When a fine jam is required, the pulp of the various fruits should be passed through a sieve previously to adding the sugar; and when more sugar is added than stated in the following table, boil a shorter time, both before and after it has been added. Pot and cover as directed for preserves.

PROPORTIONS OF SUGAR AND TIME OF BOILING.

Raspberries	6 lbs.,	boil	25	min.—sugar	3	lbs.,	boil	10	minutes.
Strawberries	6	,,	35	,,	,, 3	,,	25	,,	
Cherries	6	,,	60	,,	,, 3	,,	20	,,	
Peaches, etc.	6	,,	45	,,	,, 4	,,	5	,,	
Greengages, Orleans, Damsons, etc.	6	,,	45	,,	,, 4½	,,	5-15	,,	
Currants, red, white, and black *	6	,,	15	,,	,, 4½	,,	10	,,	
Ripe Gooseberries	6	,,	45	,,	,, 3	,,	20-25	,,	
Unripe Gooseberries and Currants	6	,,	6-7	,,	,, 5	,,	40-45	,,	
Rhubarb	6	,,	60-75	,,	,, 4	,,	20-30	,,	

Before using any of the preceding receipts, read the general directions at 91.

Orange Marmalade.

93. Take eighteen Seville oranges, or about three pounds in weight, and put them in salt and water for twelve hours, and afterwards rub them well with a cloth. Boil them in two quarts of water, or sufficient to cover them, for twenty minutes, or until so tender that the head of a pin will easily penetrate the skin; the water will then be reduced to three pints. Cut the oranges in two, or in quarters; remove the pulp into a basin and separate from it all fibres, pips, etc., till nothing is left but the clear pulp and juice. Remove all the white part from the rind, and cut the latter into large narrow slips, which add to the pulp; the whole will then weigh about a pound and a half. Add three pints of the water in which the oranges were boiled; let the whole simmer about twenty minutes, then add four pounds of loaf sugar broken into small pieces, and let it simmer again gently thirty or forty minutes, or until it is very clear, then put it into small jars.

(3.) Moulded Pulp, or Fruit Moulds.

94. These have been variously designated as gooseberry paste, apple solid, bullace cheese, gateau de pommes, etc. They are merely jams, the boiling of which has been continued till nearly all the moisture has been evaporated.

Prepare the fruit as for jam, and boil it half an hour or till tender.

* Black currants may be added to red currant juice.

If the fruit is very abundant in juice, as ripe currants, reserve a portion of the juice for other purposes, and pass the remainder with the pulp through a sieve, so as to remove all skin, seeds, etc. When reduced a little by boiling, stir in the sugar, in the proportion of ten ounces of sugar to a pint of the pulp and juice; boil the whole half an hour or till it is quite stiff, stirring it well all the time, then press it into moulds and let it stand till cold.

The pulp which remains after making jellies, if not pressed or strained too much, may also be employed in making fruit moulds. Elegant moulds are also made by boiling sago, rice, barley, etc., in the juice of fruit (211).

When the preserve leaves the pan well, forming a ball round the spoon, or when it will not adhere to the finger when touched, it is ready for the mould.

Gooseberry Moulds.

95. Two quarts or four pounds of ripe gooseberries yield about a pound and a half, or a pint and a half of pulp and juice after straining, to which about a pound of sugar may be added.

To half a peck of picked red, ripe gooseberries, add a teacupful of water; boil half an hour; then strain the juice from the berries and pass one half of them through a sieve, reserving the remaining half for any other purpose; add the strained pulp to the juice, return the mixture to the pan, and add a pound and a half of bruised lump sugar for each quart of the pulp and juice. Simmer the whole till sufficiently firm, then put it in moulds.

This is a very useful preserve and will keep well.

Green Gooseberry Moulds.

96. Green gooseberries six pounds; bruise them and boil them an hour and a quarter, then add two pounds of powdered sugar and boil the whole half an hour longer, or till of a sufficient consistency.

Red Currant Moulds.

97. Boil the currants from five to seven minutes; pour off three parts of the juice; press the remainder with the pulp

through a sieve. Boil briskly to a dry paste, and for each pound add seven ounces of powdered sugar, and boil twenty-five to thirty minutes longer.

Apple Moulds, etc.

98. Apples, after having been pared, quartered, and cored, may be boiled in four-fifths or two-thirds their weight of plum or currant juice, till nearly dry, (a few raspberries may be mixed if at hand), add the sugar and boil ten minutes longer, or until quite dry enough to be formed into a mould.

Several kinds of fruit may be mixed together, as apples, pears, plums, etc., in equal quantities.

Carrots may be scraped or pared, then boiled till tender, mashed fine, and passed through a hair-sieve; boil the pulp half an hour and add sugar equal to the original weight of the carrots; add also the juice of lemons, or other flavouring.

(4.) FRUIT JELLIES.

99. Jellies consist of the juice or pectine of fruit (8) boiled with sugar.

Remove the stalks of plums, currants, etc.; pare, quarter, and core apples, quinces, etc., and put them as they are cut into clean water, to prevent them changing colour. Red apples are sometimes not pared, in order that a little colour may be imparted to the jelly. Make an incision with a knife in bullaces, damsons, and other hardy kinds of fruit.

Put any of the fruits thus prepared into a clean stone jar, or enamelled stew-pan, adding to apples, quinces, unripe gooseberries, etc., from half a pint to a pint of spring water for every pound of fruit. Cover the jar with bladder, or one or two folds of thick paper; place it in a rather cool oven during the night; or in a deep pan of water, to be gradually heated; or place the stew-pan containing the fruit very high over a clear fire; stir the fruit with a wooden or silver spoon whilst it simmers, from a few minutes to three hours, according to the nature of the fruit, or until the fruit is quite soft, and has yielded all its juice. Care should be taken to remove it from the fire before it becomes thick or pulpy. Turn the whole into a clean, dry sieve, jelly-bag, or double muslin

strainer, that the juice may be drained from the pulp, but do not use pressure. If the juice be thick, pass it through the strainer a second time. Weigh or measure the juice, and then boil it rapidly in a clean preserving pan; if obtained from raspberries five minutes; currants or gooseberries eight to fifteen minutes; plums, apples, quinces, and strawberries twenty to twenty-five minutes; stir and skim the juice during the whole time it is boiling.

Remove the pan from the fire, and for every pint of juice, as measured before boiling, have ready from twelve to sixteen ounces of refined sugar, or half a pound of sugar to a pound of juice; bruise the sugar fine, and heat it by placing it on a dish in the oven; then stir it into the juice till entirely dissolved. Boil the juice again *quickly* from two to twenty minutes, or until it jellies strongly on the spoon or skimmer, clearing it also well from the scum. If boiled too long, the juice will lose its power of gelatinizing (8).

Clarified syrup is said to be preferable to sugar, as it produces no additional scum.

A little lemon juice may be added to apple jelly two minutes previously to removing it finally from the fire.

Pour the jelly into glasses or moulds.

Jellies may also be made by taking a pound of syrup for every pound of juice; boil the syrup to *caramel*, that is, till it falls in thick white masses from the skimmer; then pour in the juice immediately, and boil the whole from five to twenty minutes, clearing off the scum as it rises. Jams may be formed in the same way.

Jellies are usually formed from the following fruits: Strawberries, raspberries, blackberries, grapes, plums, barberries, gooseberries (green or ripe), currants (red, white, and black), apples, quinces, Siberian crabs.

Siberian Crab Jelly.

100. Siberian crabs one pound and a half; water one pint. Boil the fruit till broken; strain and weigh the juice, then boil it quickly ten minutes; add ten ounces of sugar to each pound of juice, and boil again from twelve to fifteen minutes.

The following are considered good mixtures:—

Ripe gooseberry juice three pounds; white or red currant juice one pound.

Raspberry juice one pint; white currant juice one quarter or one-third of a pint.

Raspberry, red currant and white currant juice in equal quantities.

Red currant juice three pounds; white currant juice one pound.

Damson juice three pounds; bullace or other pale plum juice one pound.

The juices should be extracted separately, and mixed just before the sugar is added.

When one part of currant juice is added to three parts of strawberry juice, the jelly will be firmer, and will require less boiling, but the flavour will not be so rich.

The pulp which remains after straining off the juice may be made, by the addition of fresh fruit, into pies, jams, or fruit moulds, as directed for such preparations. The residuum of currants and other seedy fruit will require mixing with fresh raspberries, or other rich juicy fruit. Apple pulp may be mixed with plums, etc.

When a stiffer jelly is required than can be obtained from the juice of fruit alone, dissolve half an ounce of isinglass in half a pint of water, then add a half-pint jar of any kind of fruit jelly; when quite dissolved, strain the whole through a jelly bag; then stir it till nearly cold and pour it into a mould.

Orange Jelly.

101. Dissolve one ounce of isinglass in just sufficient water to cover it. Rub off the yellow rind of four good oranges on sugar, and scrape the sugar into the isinglass, adding a small piece of cinnamon. Simmer the whole over a slow fire, stirring it frequently. Squeeze and strain the juice of oranges till you have a pint and a third, also the juice of a small lemon. Mix these together, with clarified sugar sufficient to sweeten the juice, add it to the isinglass, and when the whole boils it is ready. Strain it through a fine sieve and put it in moulds; any portion that remains may be put in glasses when it is cold.

Lemon Jelly may be made in the same way, but omit the cinnamon and add more sugar. Other fruits may be employed in the same manner.

In general, isinglass one ounce; sugar in syrup twelve ounces; fruit one pound. The fruit should be infused in the syrup.

Fine Currant Syrup, or Sirop de Groseilles.

102. Express the juice from ripe red currants gathered dry; strain and put it in a clean pitcher; let it stand in a cellar or cool place for twenty-four hours, or longer, should it not then appear perfectly curdled. Pour it gently into a fine hair-sieve, and drain the juice without pressure; pass it through a jelly-bag, add finely broken sugar equal to the weight of the juice, and, when the sugar is dissolved, turn the whole into a preserving pan and boil it gently four or five minutes; remove the scum as it rises. In the course of twelve hours afterwards, put the syrup in small dry bottles, cork them, and keep them in a cool dry place. The flavour of the fruit will be preserved, and when this syrup is mixed with water it affords an excellent beverage. It also forms a good pudding sauce. Raspberry or cherry juice may be mixed with it.

Fruit Lozenges and Wafers for Dessert.

103. To every pint of fruit juice, extracted as for jelly, add a pound of finely sifted sugar and the white of a small egg. Beat the mixture together until it becomes quite thick; then put it upon buttered paper in a slow oven; let it remain until it will quit the paper, then turn it and leave it in the oven till quite dry; cut it into shapes and keep them near the fire in a box between sheets of paper.

Ripe gooseberries may be used by passing the pulp, obtained as above, through a sieve, and to every pound of fruit add twelve ounces of sugar and the white of an egg beaten to a stiff froth. Mix the whole together, and spread it thinly upon china dishes. When sufficiently dry, by being placed in a cool oven, cut it into shapes, remove the wafers thus made into clean dishes, and set them before the fire or in a cool oven.

TO PRESERVE VEGETABLES WITH SALT.

Kidney Beans.

104. String and cut them; then place them in an earthen vessel with alternate layers of salt, till the vessel is full.

The beans should be taken out the day before they are boiled, well washed, and put in water, which should be changed two or three times to remove the salt.

PICKLES, OR VEGETABLES PRESERVED WITH VINEGAR.

As few fruits are pickled, and as pickles are used rather as condiments than as food, the directions for making them will be given hereafter.

SEEDS, OR CEREAL GRAINS.

105. The cereal grains (21) enter, either whole or ground, into almost every department of cookery. They may be either plainly cooked, or combined with other substances so as to produce endless variety of nutritious dishes.

To Cree, Boil, or Stew Grain.

106. Simple decoction in water or milk is one of the best preparations which feculent grains can undergo; but all farinaceous substances must be boiled for some time before they are thoroughly cooked. This will be the case when they become much swollen by combining with the fluid; they also become transparent when water is employed. If the cooking be continued, the grains will unite, the fluid in which they are boiled will become thickened, and finally form what is called *bouillie*.

Oats and barley should be prepared by removing the hull or skin (24). Wheat may be used either with the skin on (having been first well washed), or hulled, which if not done at the mill may be effected thus: Moisten it well and put it in a coarse bag; beat it with a thick stick or roller till the husk can be rubbed off; then wash it well in five or six waters, and rub it with the hands till it is quite free from the bran.

(*a.*) When grain requires no skin removing, pick, wash, and steep it (58); then put it in a stew-pot with water or milk, and set it in an oven, or boil it over the fire, till the fluid has been

absorbed, or till the grain is sufficiently tender. Add more fluid when necessary, and evaporate it when in excess. It should be frequently stirred with a wooden or silver spoon, or fork, to prevent burning; pewter spoils the colour of light coloured grains.

(*b.*) Or into a very clean bright pan, rinsed with a little cold water, put a quart of milk, then eight ounces of rice previously washed and picked, and a little sugar; set the pan on a trivet over a brisk fire, and stew the rice till tender, but not till dry or stiff. Serve the rice cold with preserves, etc. Rice thus cooked should *not* be stirred, and the quicker it is stewed the better colour it will be; if intended for moulds, stew it a little longer, or till more of the fluid has evaporated.

(*c.*) When it is desirable to preserve the grains separate, as in the case of rice to be eaten as a vegetable, put the prepared grain in boiling water, or tie it loosely in a cloth; keep the water constantly boiling without a cover for thirty minutes, or till the grain is rather tender, then put it in a colander, turn it gently upon a dish, which place before the fire, or in a moderately heated oven to be dried.

(*d.*) Wash the rice in several waters, put it into a large quantity of cold water; raise the temperature gradually till it boils, and boil the rice gently for fifteen minutes uncovered. Throw it into a *large* colander, and let it drain for ten minutes near the fire, and if not quite dry, set it for a short time in a gentle oven.

Preparations with Creed Grain.

Wheat, Barley, Rice, etc., Plainly Creed.

107. (*a.*) When the grain has been stewed till tender in water or milk, as may be preferred, pour it into soup plates and eat it with sugar, treacle, preserved fruit, milk, butter, mock cream, etc., or these may be added before the grain is removed from the fire or oven.

(*b.*) Creed grain may be converted into puddings (317), moulds (209), frumenty (111), *riz au lait* (112), etc. Grain creed in milk is generally preferred for any of these purposes; about four ounces of grain to a pint, or a pint and half of milk.

(*c.*) Creed grain may also be eaten with white sauce or onion sauce, or fried bread crumbs, or butter and grated cheese, etc. Lemon juice, cinnamon, or other seasoning may be added according to taste, a short time before the creeing is completed. Two-thirds of rice and one-third of Scotch barley are a good mixture, but they should be creed separately, as the barley requires a longer time than the rice.

(*d.*) Stew eight ounces of rice half an hour gently in milk, add eight ounces of sugar, let it stew till dry and rather tender; then stir into it two ounces of blanched and pounded almonds, and turn the whole into shallow dishes or soup-plates, shaking it till the surface is smooth. Sift over it freshly powdered cinnamon or allspice, and serve it cold. One or two bitter almonds pounded with the sweet ones may be added, and a few spoonfuls of cream instead of as much milk, when the rice is three parts done.

(*e.*) *Rice Balls.*—Cree the rice in milk, beat a little butter to a cream, then add eggs and grated lemon peel; stir in the rice till it is just stiff enough to be made into balls, which boil in milk and serve with raspberry sauce; or roll them in beaten egg, then in bread crumbs; fry and drain them, and serve them covered with sugar.

(*f.*) *Rice and Oatmeal.*—Boil eight ounces of rice in a pint of water, and as the water becomes absorbed, add gradually two quarts more; add also half a table spoonful of sugar and a whole one of salt; then stir in eight ounces of oatmeal, and let the whole boil twenty minutes; this will make more than four pounds of good wholesome food. If preferred sweet, add two ounces of sugar or treacle; if savoury, add salt and pepper, chopped onion, etc.

Revalenta, or the meal from peas, barley, maize, etc., may be used instead of the oatmeal.

(*g.*) *Rice and Onions.*—Take eight ounces of rice, two middle sized onions chopped fine, and a little salt; boil them briskly in a pint and half of water, in a covered pan, about fifteen minutes, or till the rice is tender, and the water absorbed. Let the pan remain near the fire till the whole is dry, and season with pepper and salt.

(*h.*) *Rice and Apples.*—Stew eight ounces of rice in water, add half an ounce of butter and half an ounce of sugar. Peel, slice,

and core three apples, put them in a stew-pan with three slices of red beet and a pint of water; stew the apples and beet till tender, and mash them up with a little butter and sugar. Put the rice on a dish, make a hole in the centre, into which put the apple. Pour over the rice a small quantity of sauce made with a little cream, butter, and sugar.

Macaroni.

108. Wash it twice in cold water; drop it into boiling water containing a little salt and half an ounce of butter. Let the water boil slowly till the macaroni is rather tender, but still a little firm to the touch; this may require three quarters of an hour or more; then drain the water from it by means of a colander. It will now be ready for soup, puddings, or to be dressed with cheese, etc.

(*a.*) Macaroni eight ounces, water one quart, salt one tea-spoonful, butter half an ounce. It may be put back into the pan with four ounces of scraped cheese or more, a little butter, salt, and pepper; toss it well together and serve.

(*b.*) Or make a thick white sauce with flour, milk, and cream, to which add the cheese and boiled macaroni; shake the whole whilst it is heated over the fire, but do not use a spoon, as it will mash the macaroni.

(*c.*) Macaroni four ounces, milk and water in equal quantities one quart, cheese two ounces. Wash the macaroni well in two waters, then put it into the warm milk and water, and stew it for about two hours; add a little butter, cream, salt and cayenne, and the cheese grated or sliced; mix all well together, and stir the mixture over the fire till the cheese is dissolved; then pour it on a dish, cover it with thinly sliced cheese, and brown it with a salamander. Macaroni thus prepared is excellent.

Sweet Macaroni.

108*. Drop four ounces of washed and soaked macaroni into a pint and half of boiling milk; add a few grains of salt and a few thin strips of orange or lemon peel, or cinnamon. Boil very gently till the macaroni is rather tender, add two or three ounces

of sugar broken small, and boil till the pipes are soft and well swollen. Drain the macaroni and arrange it on a hot dish; stir the milk quickly to the well beaten yolks of three large eggs, shake the whole briskly over the fire till it thickens; then pour it over the macaroni and serve. Instead of eggs, cream heated and sweetened may be poured over the drained macaroni, then dust finely powdered cinnamon over.

Vermicelli.

109. Wash, steep and drop it into boiling milk or soup. Boil it about half the time required for macaroni. If the fluid does not boil, the vermicelli will stick together.

Peas, Haricots, and Lentils. (28).

110. (*a*). Wash and then soak them during three or four hours, or from twelve to twenty-four hours if requisite, changing the water once or twice during the time. To one pint of these seeds add three pints of cold soft water, an ounce of butter, a little salt, and, if the water be hard, a few grains of soda. Simmer or boil gently during three hours, or until the seeds are tender.

(*b*). Another mode of boiling peas, etc., is first to pick and clean them by rubbing them in a *dry* cloth; then sprinkle them from the hand into fast boiling water, very gradually, so as not to check the boiling. The water should be sufficient to cover them, and when it has nearly evaporated, add cold water, boil them a few minutes longer, and the skins will break.

Drain off the water, stew the seeds gently for about ten minutes with a little salt, sugar, pepper, chopped parsley, and one or two ounces of butter well mixed together, and stirred till ready to be served. Some add juice of lemon, chopped eschalots, or fried onions, etc. They may also be stewed with white sauce, a little butter, and an eschalot finely minced.

The water in which they have been boiled may be converted into a palatable soup by putting it into a stew-pan with fried onions, a little flour, toasted bread, etc.

Lentils Fricasseed.

(*c*.) Stew some sliced onions in melted butter; boil and drain

the lentils, and add them to the onions with a little broth, pepper, salt, and a sprig of savory, which remove before serving; reduce the same by simmering to a proper consistency, and add a very small quantity of vinegar when ready.

As the leguminous seeds contain much nitrogen (15), while rice, potatoes, carrots, etc., contain little, it appears judicious to combine one of the former with one of the latter, in order to produce a cheap and nutritious compound; mashed potatoes, or creed rice, stewed with peas, haricots, etc., make an excellent dish. As these seeds also are deficient in fat or oil, butter or oil should be added. Hence the general custom of boiling beans, etc., with fat bacon.

Green dried peas, split peas, rice, Scotch barley, one handful of each: steep twelve to eighteen hours, changing the water. To one pint add three pints of soft cold water, one ounce of butter, salt, etc. Simmer or boil them gently three hours or till tender. Drain and stew gently for ten minutes with a little salt, sugar, pepper, chopped parsley, etc., and one or two ounces of butter. Chopped eschalots, fried onions, etc., may be added. Or stew the peas, etc. with white sauce, a little butter, and an eschalot finely minced. Boiled carrots, turnips, onions, celery, and herbs may be stewed with the leguminous seeds.

Frumenty, Rice Milk, Gruel, etc.

Frumenty.

111. To each pint of creed grain add two pints of water or milk, or any other proportion which may be preferred. Place the pan containing them on the fire, and stir the mixture constantly with a wooden spoon or slice, breaking the lumps to prevent the grain being burnt. When near boiling, a little flour, previously mixed smooth with a little cold milk or water, may be stirred in, and as soon as it boils it is ready to be served.

Some add pimento, sugar, or salt, according to taste.

To the creed grain may also be added currants well washed and picked, or raisins well cleaned, or apples pared, cored, and cut small. Some thicken frumenty with the yolks of eggs beaten with a little milk, and instead of pimento add cinnamon or grated nutmeg; or flavour it by boiling a laurel leaf, etc., in it.

Riz au Lait, or Rice Milk.

112. Proceed as for frumenty; or wash a table-spoonful of good rice, drain the water well from it, then put it into a stew-pan with a pint of milk. Place the pan on the fire, and as soon as the milk boils, let it stand to simmer till the rice is tender. Sweeten with sugar; or add an ounce of butter, two tea-spoonfuls of sugar, and a little salt; stir the whole well together, and add a few drops of orange-flower water, if liked. The yolk of an egg may also be added. Vermicelli, semolina, tapioca, etc., may in this way be added to boiling milk, and served plain or seasoned. Prepared barley, groats, hominy, etc., may be used in the same way.

Potations of Barley Water, etc.

113. (*a*). Boil either the creed or uncreed grain in water, or pour boiling water upon the grain, and let it stand twelve hours. Strain and add lemon juice and sugar according to taste. A quart of water will be sufficient for one ounce of grain.

(*b.*) Or, pearl barley two ounces; water four pints. Wash the barley well, then boil it in one half-pint of the water for a short time, pour off the water, and add the remaining three and a half pints of boiling water; boil the whole down to one quart, and strain.

(*c.*) *Compound Barley Water* is prepared by boiling together two pints of barley water, a pint of water, two ounces and a-half of sliced figs, half an ounce of liquorice root sliced and bruised, and two ounces of raisins. Boil the whole down to two pints, and strain. This decoction is emollient, demulcent, and slightly aperient.

Rice Water.

(*d.*) Rice two ounces, water one quart, boil to one pint, and strain.

GRAIN REDUCED TO MEAL OR FLOUR.

114. When grain has been reduced to coarse meal or fine flour, it becomes more generally applicable to the various purposes

of cookery, and the dishes which can be prepared with it in this state, particularly if combined with fruit, eggs, milk, etc., are innumerable; nor is it an easy matter so to arrange this department as to give a clear and comprehensive view of the whole.

Meal or flour, mixed with a moderate portion of water, milk, butter, or eggs, forms paste or dough; a further addition of fluid forms batter and porridge; and by a still further dilution, gruel is formed. The two former are variously employed in making bread, pies, puddings, etc., but before commencing with these divisions it will be better to introduce a few general directions for mixing the ingredients commonly used, as a reference to these modes of combining the articles will prevent much repetition hereafter.

Methods usually employed in Mixing Sundry Solids and Fluids.

Flour and Water or other Fluid.

115. (*a.*) Mix the flour and fluid intimately together and beat the whole well. When salt and sugar are added, they may be mixed with the flour, or dissolved in the fluid. When butter is employed, it also may be dissolved in the fluid by means of a little heat.

(*b.*) When soda, and acid or sour milk, or butter milk, are used, mix the soda thoroughly with the flour, stir the acid to the cold fluid; then incorporate it well with the flour by means of a wooden spoon. When baking powder is employed mix it intimately with the flour, stir in nearly half the fluid and the salt, and beat the whole quite smooth, then add the remaining fluid and eggs, and bake immediately.

Surplus milk may be kept in a clean vessel till it becomes acid, used as wanted, and fresh milk added from time to time; this will be found very useful for cakes and other pastry when bicarbonate of soda is employed. A pint of milk, two pounds of flour, a small tea-spoonful of soda and four ounces of butter will be pretty nearly the proportions required. The vessel in which the milk is kept should be occasionally changed,

(*c.*) Make a hole in the middle of the flour, break in the leaven, add the water and stir in about half the meal, cover it with the remainder of the meal, let it stand all night in a

moderately warm place. In the morning add the salt and as much warm water as will make the whole into a stiff paste; knead it well, and let it stand near the fire for two hours; then form it into loaves and bake.

(*d.*) Put the meal or flour into an earthenware or wooden bowl, make a hole in the centre of the flour with a wooden spoon to within an inch of the bottom. Stir the yeast into a portion of the warm fluid (90°) and let it stand for a few minutes to settle. Pour the clear part of the yeast and fluid, (rejecting the sediment, unless the yeast has been previously purified, 125) into the hole which has been made in the flour, and stir in gradually so much of the latter from the circumference or side as will form a thick smooth batter. Scatter a thick layer of the flour over the top, cover the whole with a thick clean cloth, and place it where it will be warm (between 60° and 70°), elevated a little above the floor of the room, and free from any current of air. Let it remain there an hour or two, or until the yeast has risen and cracked the flour, or until bubbles appear; a *large* quantity may stand all night. Remove the bowl to a table and pour into the sponge or raised batter, as required, the remainder of the fluid while warm, and with the salt dissolved in it, but avoid rendering the dough too moist; stir in as much of the meal or flour as you can with a spoon, cover the leaven with plenty of the meal, and knead the dough slowly and steadily with the back of the closed hands, to which it should be prevented from adhering by a free use of the meal. When nearly the whole of the meal has been worked in, draw the edges of the dough frequently towards the centre, that the whole may be well and evenly mixed. Continue the kneading till all the meal, crumbs, and lumps have disappeared, and till it ceases to stick to the hands; then cover it again with the cloth and leave it to rise a second time. When it has risen very much and begins to crack, which may be the case in about an hour, put it on the paste-board, or table, make it into loaves and bake them in tins or earthen pots. The loaves should be cut slightly on the tops, and just below the edges of the dishes, with the point of a sharp knife, by which means the dough will rise better.

(*e.*) Stir the flour gradually into the boiling fluid.

(*f.*) Mix the flour with a little of the cold fluid till quite smooth; pour it to the boiling fluid, and stir it till sufficiently cooked; when nearly cold, beaten eggs may be stirred in if required. Porridge, polenta, batter for puddings, etc., are made by either of the two last methods.

When intended for a baked pudding, the batter must be stirred over the fire for a few minutes, then poured into a basin, and while it is hot, stir in the butter, sugar, grated lemon rind, and fruit (when used); as soon as it is nearly cold, add the beaten eggs.

(*g.*) Beat the eggs and salt till the yolks and whites are well mixed; stir the fluid to them by degrees with a wooden spoon; strain about one quarter of the whole to the flour, and mix till quite smooth; then strain to it the remainder of the eggs and fluid very gradually; beat the batter well during the mixing, and continue the beating for a quarter of an hour after the whole has been well mixed.

(*h.*) Pour the boiling fluid on the flour; cover it over and let it stand twelve hours; then add the beaten eggs. This method is commonly used for arrow-root, and other substances consisting principally of starch.

(*i.*) Set the flour as for bread with the yeast, beaten eggs and sugar well mixed and poured into the middle (115 *d*). Let them stand before the fire till the yeast has worked its way amongst the flour; add the butter beaten to a cream, currants, etc., and mix the whole well.

Butter and Flour, etc.

116. (*a.*) Rub the butter into the flour or bread crumbs, till the whole is in crumbs; add the salt and sugar, and mix them into a stiffish paste with as little fluid as possible, adding it by degrees. When the yolks of eggs are used, beat them and add them to the cream or other fluid.

(*b.*) Make the flour into a stiff paste with a portion of the butter and fluid; roll out the paste into a square; form the butter into a ball; place it in the centre of the paste; then close the latter around it; roll it out lightly two or three times, turning the ends always to the centre, or folding it in three. Or, after

rolling out the paste, distribute the butter evenly over the surface; fold and roll it carefully.

This method is employed in making light pastry for pies, etc.

(*c.*) Beat part of the butter to a cream, or slowly dissolve it and mix it with the flour; then add the water, and roll in the remaining butter. Or, dissolve the butter in the water, break the eggs into the flour, skim the butter from the top of the water and mix it with the flour, adding as much of the water as is necessary. This method is recommended for standing pies. See 190.

(*d.*) Cut the butter into small pieces, dissolve it gently in one half the milk in a saucepan, applying no more heat than is just sufficient, and shake it well during its solution. Add the remaining milk or other fluid along with the salt and sugar; pour the whole by degrees at a temperature of 98°, or blood-heat, to the flour, and stir the whole till quite smooth. If too thick, add a little more fluid, and, lastly, stir in the beaten whites. When yeast is used, pour the dissolved butter, etc., into the centre of the flour, with a portion of which form a batter, and then add the yeast and eggs; when well mixed, cover the whole with a cloth, and set it in a warm place to rise. When baking powders, or an alkali and an acid are used, the milk and all other fluids should be added cold. Butter is sometimes recommended to be beaten to a cream, and then added to the flour, etc., but cakes are quite as light when the butter is dissolved as above.

(*e.*) Dissolve the butter as in *d*, and stir in gradually the whisked eggs, beat in the flour, then the sugar, and beat the whole well.

(*f.*) Add the salt and sugar to the flour, make a hole in the centre, put in the yeast, and pour over it the warm milk in which the butter has been dissolved; beat the whole into a stiff batter or light dough, and let it stand to rise four or five hours; then add the whites and yolks of eggs well beaten, then the fruit, etc. Butter the tins or moulds, fill them rather more than half or nearly three quarters full, then let the dough rise from one to three or four hours and bake.

Eggs, Flour, etc.

117. (*a.*) Mix the flour gradually with the eggs, well

whisked and strained; beat the whole well but lightly, with a wooden spoon, then add the milk.

(*b.*) Mix the yolks smoothly with the flour, salt, etc.; thin the batter with the milk, and stir in the whisked whites.

(*c.*) Beat the butter to a cream; shake in the sugar whilst the beating is continued; whisk the whites and yolks separately, and add a spoonful of each alternately to the butter and sugar; after which add the citron in strips, currants, etc., and then the flour gently through a sieve. The beating must be continued till the whole has been well mixed.

(*d.*) Add the sugar gradually to the beaten egg; whisk the mixture four or five minutes, then strew in gradually the flour mixed with the salt, sugar, or flavourings; when well mixed add the butter, previously liquified, or beaten to a cream (116 *d*), or the milk in which the seasonings have been boiled; these should be added by small quantities at once, and the beating continued till each portion has been thoroughly incorporated before the next portion is added.

If the whites of eggs are to be added separately, stir them in lightly just before cooking.

(*e.*) Boil the sugar with a little water, then pour the boiling sugar on the eggs, previously whisked a little, and whisk them with the sugar fifteen or twenty minutes; then stir in the flour. It should not be stirred after the flour has been added.

(*f.*) Break the eggs into a pan and add the sugar; whisk the mixture over a slow fire until it is rather warmer than new milk; remove it from the fire, but continue the whisking till it is cold, when it ought to be rather thick. Mix in by degrees the flour and seasoning. The flour should be dry, but cold.

(*g.*) Stir gradually into the milk, semolina or other granular preparations; let it boil over a gentle fire for ten minutes; add the sugar, butter, and salt; boil and stir the whole continually for two or three minutes longer, remove it from the fire, let it cool a little, then stir in briskly but gradually the yolks and whites of eggs well beaten together and strained, and, when approved, bitter almonds pounded with a little sugar. When the mixture is nearly cold, pour it gently into a buttered dish or mould,

prepared as for gâteau de riz (153), and bake it in a very gentle oven for about an hour.

(*b.*) To flavour milk with cocoa-nut, cinnamon, lemon-rind, etc., see 56.

Eggs and Cream or Milk.

118. Simmer one half of the milk or cream with the sugar and seasoning for ten minutes; or, heat them in a pitcher or jar placed in a vessel of boiling water; remove it from the fire, and, when the fluid is rather cool, add the yolks well beaten with the remaining cream; place the whole on the fire and stir it till thickened, but do not permit it to boil; remove it from the fire and stir it occasionally till cold. When you have no cream, add more yolks of eggs; and when both cream and eggs are scarce, add a teaspoonful of arrow-root, etc., previously mixed smooth with a little cold milk, then with the beaten yolks, etc.

Add the milk, when near boiling, to the eggs and sugar, and bake.

Bread Crumbs or Hominy, Milk, etc.

119. (*a.*) Boil one half the milk and pour it over the bread crumbs, etc. (58).

(*b.*) Boil the seasonings in the milk and pour it over the crumbs, etc., and cover the whole closely for half an hour; beat the eggs and sugar, and add to them gradually the other ingredients. Mix the whole well together, fill a mould with it, and boil or steam it half an hour, or put it into a dish and bake it.

BREAD.

120. The Hebrew word לֶחֶם the Greek βρωτὸς and the English word *bread*, in their widest acceptation, are used to express food in general; in a more restricted sense they signify all preparations from the cerealia and other farinaceous substances, and thus may include pies, puddings, etc. The English word, however, is more generally applied to loaves and cakes made with the flour of wheat, maize, barley, rye, oats, rice, etc., but only those grains which contain gluten admit of being converted into light spongy bread; hence wheat meal or flour is best adapted to

this purpose. In the last application of the word, bread varies very much in its qualities according to the material of which it as made, as white bread, household bread, various kinds of oat bread, etc.; it also varies according to the mode of preparing it; as fermented or leavened bread, unfermented or unleavened bread, also muffins, rolls, cakes, etc., in endless variety.

Coarsely ground and undressed wheat meal is undoubtedly the most wholesome, and should always be preferred to fine flour, from which the bran or skin of the grain has been removed (21). The bran is a natural condiment, rich in gluten and fatty matter, and even the ligneous portions of it, though indigestible, cannot be well dispensed with, particularly by those who lead a sedentary or inactive life. To some who have not been used to it, or whose digestive powers are weak, the bran may at first act too much as an irritant—in such cases bread made of coarse meal should be adopted by degrees.

It has been generally supposed that the colour of brown bread is due to the particles of bran contained in it; but recent observations prove that the brown colour is owing to the action of *cerealine* upon the starch of the flour, converting it into dextrine or sugar during the raising and baking. The scattered particles of bran will impart a yellow colour to the bread, but will not turn it brown. *Cerealine* is almost identical with *diastase*, the active principle of malt, and is due to the action of moisture and heat upon the albuminous principle of the bran; hence flour with the bran in it is much more subject to deterioration than fine flour. The addition of a small quantity of alum will either prevent altogether, or greatly retard, the transformation of starch into sugar; hence the whiteness and dryness of bread in which alum has been employed. Lime water is equally efficacious.*

As starch is converted into dextrine in the process of digestion, it is possible that this change during fermentation and baking may be no real disadvantage. In the crust of bread the starch always undergoes considerable conversion.

When corn is ground by mill-stones, small particles of stone are frequently mixed with the *undressed* meal; the bran also is given

* See ODLING'S Lecture in *Journal of the Society of Arts*, April 9, 1858.

off in large flakes; when ground by iron mills no gritty matter is introduced, and the bran is more minutely divided.

To obtain the meal in its greatest perfection, the wheat should be of good quality, fully grown, ripe and free from disease. It should be thoroughly cleansed either by mechanical means, or by washing it in several waters and drying it well before it is ground. The meal should either be used quite fresh, or kept in a clean vessel in a well aired and dry room. The excellence of loaves, cakes, etc. depends materially upon the baking, and no combination of ingredients will be successful, unless great attention be paid to the oven and its temperature (63).

Unfermented or Unleavened Bread.

121. (*a.*) Mix eight pounds of coarse wheat meal with two or three pints of soft water; make it into a stiff paste by kneading and beating; let the dough stand in a warm place with a cloth over it for about half an hour, then make it into small loaves or cakes about two inches thick, and bake them in a hot oven. A little salt may be added when mixing the dough, and in cold weather the water should be rather warm.

Though this bread is sad, and difficult of digestion by weak stomachs, it is wholesome and agreeable to such as are accustomed to it. As its sadness is chiefly owing to the quantity of gluten contained in wheat meal, it may be improved by adding oatmeal, maize meal, boiled potatoes well bruised, potato-starch, boiled or ground rice, etc., or a mixture of these; two-thirds of the whole being wheat meal. Some add as much water to the coarse wheat meal as it will absorb, and let it stand four or five hours, then knead in the maize meal, etc., and bake. When barley meal is thus made into stiff cakes about three quarters of an inch thick, they are called *barley bannocks;* very thin barley cakes are called *scones.*

(*b.*) When oatmeal is made into thick cakes, they also are called *bannocks;* the terms *cakes* and *clap* bread are applied to the thin sorts. Make fine oatmeal into a stiff paste with warm water; when cold water is used, the paste becomes shorter and more crumbly in the working; roll the paste out thin, and rub the surface of each cake over with dry meal, with the palm of the

hand. Bake in a very hot oven, or frying pan. Place each on edge before the fire to harden. It will keep in a dry place three or four months.

(*c.*) Oat-cakes, made with a batter composed of oatmeal and water, raised with a little yeast, and baked on a bakestone, are excellent as prepared in Cumberland and the West Riding of Yorkshire. They are extremely thin, and if not toasted and buttered when recently baked, are dried and eaten in a crisp state.

Cakes baked on a flag or stone, set for that purpose, or in a frying pan, are frequently called *bakestone* cakes. Of these there are several kinds.

1. *Water-cakes.*—Flour made into a paste with water, a little salt being added.

2. *Cream-cakes.*—Cream or cream with milk is used for these instead of water.

3. *Short-cakes.*—Mix flour, butter, etc., as for pastry (186).

The paste of each kind must be rolled out very thin, and then baked on a bakestone, or in a frying pan. A few currants are sometimes added.

Biscuits.

122. This term is derived from *bis*, twice, and *cuit*, baked, and is generally employed to designate thin, hard cakes, made of flour and water; it is also applied to richer compounds of flour, butter, sugar, cream, eggs, etc.

(*a.*) Take coarse wheat meal, Indian meal, fine flour, rice flour, oatmeal, or a mixture of two of these, and make it into a stiff paste with water, skimmed milk, new milk, or cream.

The dough for hard biscuits should be kept in a loose and crumbly state until the whole is of an equal consistence; then rub, work, or press it together with the hands, till the whole is formed into a mass. The dough should be beaten out as thin as possible with a paste-roller, or biscuit-lever; fold it in two or three, and cover it with a damp cloth till you beat it out again.

Giving the dough too many folds before it is rolled or beaten out very thin, causes it to be tough, in which state it will shrink or draw up; unless the paste be allowed to rest a short time after it has had a turn or two, the surface will crack, and little

progress will be made. Roll and cut it finally into cakes, about a quarter or half an inch thick; prick them with a fork, and bake them six minutes or more, according to their thickness, in a quick oven, or over the fire. The addition of a very small portion of yeast, or baking powder, not so much as is used for light bread, may be employed to advantage.

(*b.*) Or flour four ounces; butter four ounces; bread-dough well risen eight ounces. Work the butter and flour well together, then add them to as much dough as will form a stiff paste. Roll it out rather thin, cut it into biscuits, prick them and bake them about twenty minutes in a moderate oven. The paste will not require beating, and forms excellent biscuits, crisp but not too hard.

(*c.*) When the meal or flour of wheat is used, a little potato-starch or arrow-root (about half an ounce or more to a pound of flour), is considered an improvement (34).

Oatmeal, potatoes boiled and bruised, and butter, make excellent biscuits; instead of potatoes, rice flour may be used, and then a little oil is said to be preferable to butter. Oatmeal and pease-meal in equal portions may also be employed. Biscuits may be varied by the addition of butter, eggs, sugar, salt, caraway seeds, etc.; and the pulp or juice of fruits may be used instead of water.

(*d.*) PROPORTIONS OF BUTTER, ETC., TO ONE POUND OF FLOUR.

NO.	BUTTER.	EGGS.	SUGAR.	FLUID.	ARTICLES.
1.	—	—	—	¼ to ½ pint.	Plain biscuits. Add 1 oz. of butter, to form Captain's biscuits.
2.	1 to 2 oz.	—	2 oz.	—	Victoria biscuits.
*3.	1 oz.	1	1 oz.	½ pint new milk.	Coffee biscuits.
4.	1 to 2 oz.	1 to 2	—	—	
5.	1 to 2 oz.	1 to 2	1 to 4 oz.	—	
6.	3 oz.	—	1½ oz.	—	Edinbro' biscuits, made into 12.

Mix as at 116 *a*. Beat the dough as above directed, roll it

* For Abernethy biscuits leave out the egg; half a drachm of caraway seeds may also be added.

to the required thickness, pierce the cakes to let out the steam, and bake them by a moderately quick heat till they are of a fine brown colour. When they are three parts done, remove them to a slow oven, and allow the steam which may arise to escape, otherwise the biscuits will become soft instead of crisp.

When thick biscuits are pierced only half way through, they are easily separated for the purpose of being buttered.

The heat of the oven is not required to be so high for those biscuits which contain sugar, as they acquire more colour in a short time; neither should they be dried so much as others.

Plain Biscuits, formed of undressed wheat meal and water, well made and carefully baked, are probably the most wholesome kind of bread, and may be kept in tin canisters for a considerable time without injury. Those who find the biscuits too hard and tenacious may add a little arrow-root, ground rice, etc., to the meal as above directed. Dyspeptics are frequently able to digest this kind of bread with ease, when fermented bread disagrees with them, owing probably to the renewal of the fermentative process in the stomach. Next to plain biscuits thin slices of loaf bread well toasted (65) will generally be found the most digestible. The toast should be crisp, of a light brown colour, and never buttered while hot. Sweet butter, applied to biscuits or cold toast, will seldom cause inconvenience to the digestive organs.

Raised or Light Bread.

123. As raised or light bread is generally preferred, and is more easily digested by weak stomachs, various modes have been employed for producing it without causing fermentation. The following are the principal articles used for this purpose:—

1. Baking powders prepared by various chemists.

Or, bicarbonate of soda four ounces; tartaric acid three ounces; best flour two ounces.

Or, bicarbonate of potash five ounces; tartaric acid four ounces; powdered loaf sugar one ounce; finely ground Patna rice four ounces; East Indian arrow-root one ounce.

The ingredients should be beaten and mixed well together in a marble or Wedgewood mortar. Keep the powder closely covered, and in a dry place.

2. Bicarbonate of soda and milk, or butter-milk, the milk having been kept till rather acid (115 *b*).

3. Bicarbonate of soda and hydrochloric acid.

4. Potash and treacle.

5. Eggs, snow, etc.

The baking powders are much the readiest for general purposes, but as most of those in use are a mixture of bicarbonate of soda and tartaric or other acid, tartrate of soda, or some other purgative salt is formed, which might prove injurious by daily use. The powders, however, may be occasionally employed with impunity.

A similar objection applies to the frequent use of soda and milk, or butter-milk, which produce lactate of soda. Bicarbonate of soda and muriatic (hydrochloric) acid are preferable to the preceding means of raising dough, but they require care in weighing, measuring, mixing, etc., and few persons will take the trouble of acquiring the proper method of employing them. Besides, few chemical preparations are ordinarily pure enough for culinary purposes, and hydrochloric acid frequently contains arsenic. The soda and acid unite and form carbonic acid and chloride of sodium or common salt; the former is prevented escaping too rapidly by the gluten contained in the flour, and thus the dough is raised and rendered light, the latter supplies the place of salt, usually added in making bread.

Potash and treacle are generally employed in making gingerbread. The treacle contains glucic and melassic acids (*5*), which unite with the potash, or other carbonates employed, and thus carbonic acid is set at liberty, which raises the dough as above.

Eggs are frequently employed, not only for making dough lighter, but also for enriching it with albumen, which, when coagulated by heat, renders arrow-root, rice, and other articles abounding in starch, more compact than baking powders could do. See *53*.

Fresh fallen snow may be substituted for eggs in batter for pancakes; two large spoonfuls of snow being considered equivalent to one egg. The snow should be quickly stirred into the flour, and the batter should be fried immediately.

Gum-water, and other adhesive substances are occasionally

added to produce a light and porous mass. Carrots also may be used instead of eggs in making plum-pudding, etc.

A few other substances added to flour by bakers for various purposes must be here noticed.

Alum is very generally used by them to improve the appearance of bread by rendering it whiter and firmer, and less apt to crumble when cut. The smallest quantity of alum which can be employed to produce these effects is from three to four ounces to a sack of flour weighing 280 pounds. The use of this article should be discountenanced.

Carbonate of Magnesia has been recommended by Mr. E. Davy, as an excellent substance for neutralizing the acidity produced during the fermentation of bad flour, in the proportion of from twenty to forty grains of it to one pound of flour. A small quantity of magnesia cannot be considered an injurious addition to bread, but, in ordinary cases, it ought to be regarded as not essential when the quality of the flour is good.

The best addition to flour which has suffered from moisture is lime-water, which neutralizes the acid that has been formed, destroys the musty flavour, and restores the sweetness of the flour. It is also quite wholesome. Water saturated with lime is preferable to alum for rendering bread white, moist, and soft; it is said to act by coagulating the gluten of the wheat.

Sesquicarbonate of Ammonia, or volatile salt, also improves flour which has been slightly damaged. It removes any acidity which may exist either from the inferior quality of the flour, or from the ferment, but it does not improve the colour like alum or lime-water. It is broken up by heat into carbonic acid, ammonia, and bicarbonate of ammonia, all which are volatile in the oven. Though the odour of ammonia is evolved in the kneading, and the taste of the dough becomes saline, these characteristics are lost during the baking, the free alkali being disengaged, and the bread made lighter.

The powder may be mixed with the flour, or dissolved in the water used to make the flour into dough. The curl of the oak-leaved cracknels is said to be produced by this salt. It is regularly employed in the formation of a peculiar kind of small biscuit, and sometimes in the proportion of half an ounce to a pound of flour.

Raised, but Unfermented Bread.

124. The flour or meal of wheat is best for making raised bread, because it contains much gluten.

	FLOUR OR MEAL.	BICAR. SODA.	HYDRO ACID.	WATER.
White Bread . .	2 lbs.	½ oz.	½ oz.	1 pint.
Brown, or Meal-Bread	1½ „	„	„	„

Instead of the acid and water, one pint of butter-milk may be used. Twenty-five minims or drops by measure of hydrochloric acid, if of proper strength, should exactly saturate twenty-five grains of the bicarbonate of soda.

Mix the soda and the meal or flour as thoroughly as possible. Pour the acid into the water, and diffuse it perfectly, by stirring them well with a rod of glass or wood; then, with a wooden spoon or spatula, stir the fluid into the flour till the whole is well incorporated. Put the dough into a tin, or earthen pot, or make it into thick cakes, and bake immediately in a quick oven.

The water should be cold, the dough as thin as it can be conveniently handled, and the oven hotter than for fermented bread. Skimmed milk may be used instead of the water, and butter-milk instead of the acid and water.

The dough thus made may be used either for baking or boiling. It may also be made into tea-cakes by using milk instead of water, and adding two ounces of sugar, two ounces of butter, and six ounces of currants, if preferred. Rub the butter into the soda and flour, dissolve the sugar in the milk, to which add the acid, and then mix the whole intimately, adding the required quantity of currants. Bake in shallow tins, or earthen pans.

Some persons consider this method superior to fermenting the dough with yeast, as well as more economical; but Liebig is of a different opinion, and says, "Only a small part of the starch of the flour is consumed in the production of sugar, and the fermentative process is not only the simplest and best, but also the cheapest of all the methods which have been recommended for rendering bread porous."

Dr. MUSPRAT also observes, "From the circumstance that the various mixtures of alkalies and acids evolve the aëriel body too rapidly, and from the want of that elasticity which kneading confers, the gas freely escapes, as well before introducing it into the oven as after, and the consequence is the formation of a heavy loaf."

A method has lately been introduced of raising dough by forcing carbonic acid ready formed into the mixture of flour, water, etc., and the bread thus made has been highly commended. This process has been patented by Dr. DAUGLISH.

FERMENTED BREAD.

125. The articles employed for raising fermented bread are leaven and barm or yeast, the former being sour dough, and the latter a product of vinous fermentation. Leaven added to dough excites in it a true alcoholic fermentation, but it also produces a portion of lactic acid and frequently vinegar also; the latter is principally driven off by baking, but the former remains in the bread and imparts to it a sour taste.

The producing of *new* leaven is a tedious process, and it does not always answer so well as that which has been kept from a former baking, being apt to run into putrescence. It is made by working wheat-flour with water into dough; this is kept in a temperature of from 70° to 80°. The time of its rising will vary considerably, from a few days to a fortnight. In this process the fermentation is at first of the vinous kind; it passes, however, very soon into the acetous, and is generally distinguished by a slight acidity, which it gives to the bread. Leaven may be kept for a week or two buried in flour.

German or Dutch yeast, imported in a solid state, is much esteemed for the purpose when it can be obtained fresh. The crust of the bread is said to be softer than when prepared with ordinary yeast, and fermentation is produced much sooner.

Brewers' yeast is frequently very bitter, and should be purified by frequent washings in large quantities of cold water. Stir it well up in the water when first received, let it stand all night, drain off the water, add fresh water, and let it stand several hours.

The white of an egg beaten up with the first portion of water will render the effect more certain. Some recommend a few clean hot cinders from the fire to be put into the yeast if it is bitter or not very fresh; when the cinders are cold they will fall to the bottom, and the yeast must then be poured off and strained. Recently burnt charcoal, which the cinders represent, absorbs gases, and removes colouring and odorous matters generally from substances to which it is added.

By changing the water daily in winter, and twice a day in very hot weather, yeast may be preserved fit for use much longer than if this precaution were neglected.

The richer the dough the more yeast it requires; fat hinders fermentation; sugar in moderate quantity accelerates it, but when added in excess retards it, unless more yeast be added. A small portion of brown sugar stirred into yeast before the bread is made will restore the strength when it has ceased to ferment freely.

A tea-spoonful of sugar will be sufficient for two table-spoonfuls of solid yeast, and a little warm flour will further help the fermentation.

Rapid fermentation, caused by using too large a quantity of yeast, is a disadvantage, as the bread sooner becomes dry, and the flavour is not so good as by a slower process. A small quantity of yeast will be equally efficacious as a large one, provided the dough be permitted to ferment longer.

Soft water is the best for making bread, and the water, milk, or other fluid employed should be added at a temperature of about blood heat, 80° or 90° Fah., and the dough should be kept as warm as new milk, or between 60° and 70°; if kept warmer, or permitted to remain too long in a warm place, the dough will become sour; should acidity take place a solution of sub-carbonate of soda should be worked in to neutralize it.

Skimmed milk, new milk with an ounce of butter dissolved in it, a few spoonfuls of cream, or sweet butter milk, may be substituted for the whole or part of the water, and the bread will be enriched by it; but it will become dry sooner. When milk is used, the dough should be made lighter by the addition of more fluid.

Leaven Bread.

126. Flour or meal eight pounds; leaven three ounces; warm water one pint. Mix and bake as at 115 *c*.

Bread fermented with Yeast.

127. This kind of bread is decidedly most esteemed, and since it is so generally used, forming a part of nearly every meal, it is of great importance that it should be always well made. Uniform success may be attained by attending to the instructions given respecting the flour, (120), yeast, and fluid, (125), mixing, kneading, and fermenting (115 *d*). Flour or meal eight pounds; good fresh yeast two large table spoonfuls, or German yeast two ounces;* water or milk, or a mixture of both, three and a half or four pints; salt a dessert spoonful or more if preferred (55). Mix, ferment, and knead, as at 115 *d*. The pans or tins in which the loaves are baked, should be rubbed with a little butter before the dough is put in, that the loaves may leave the pans more readily after baking. Let the loaves stand fifteen or twenty minutes in the pans before they are put into the oven, which should be well heated. When sufficiently baked, remove the loaves from the pans, and turn them on their sides, or upside down, till cold, otherwise the under part of the loaves will be wet and blistered in consequence of the steam not escaping. The whole meal absorbs more liquid and requires rather more yeast, or a longer time to rise, than fine flour. Dough formed of coarse meal should not be made so stiff as when formed of fine flour; if it be too soft after it has risen, add a little more meal; it also requires a hotter oven and should remain in it longer.

128. When brown bread is preferred rather moist, mix rye meal with the wheat meal; or pour a pint of *boiling* water upon one-third of the wheat meal; stir it till it forms a thick paste, which divide into small portions to cool; then knead it exceedingly well with the remaining two-thirds of the meal, adding the yeast and remaining fluid at the temperature of 80° or 90°. The boiling water dissolves a portion of the starch, and this prevents the bread from becoming dry. See 131.

* A little experience and attention will make a less quantity of yeast answer better.

Bread when taken from the oven is about one-third part heavier than the flour used in its preparation, so that eight pounds of flour should produce eleven pounds of bread. In thirty-six hours after it has been baked, it will have lost nearly one-thirtieth part of its weight.

The average moisture in flour being 13·4 per cent., and that in home-made bread 33·93, the composition will be,

Dry Flour . . .	66·07	
Moisture in the Flour . .	10·22—	76·29
Water added in making .	23·71	
	100·00	

Loaves which have been kept too long may be made to resemble new bread by placing them in a gentle oven till they are hot through, but not till they are hard or dry. Large loaves may be dipped in cold water previously to being put into the oven. This observation applies also to cakes, biscuits, and other pastry.

Dinner Rolls, Cakes, etc.

129. Dinner rolls, and thin or thick cakes, may be formed of the dough made as for bread. They may be baked either in the oven, or if thin, in a frying-pan over the fire; but a loaf containing fourteen or sixteen pounds of flour or meal, and baked in a brick oven during the night, is more economical, and should be preferred for general use. Biscuits, buns, tea-cakes, etc., may be made in the same way by adding butter, sugar, etc., to the dough. See 122 and 135.

Crusts, Rusks, etc.

130. Good crusts to be served with cheese, etc., may be formed thus: Take a half-baked loaf, tear it into small rough pieces with a couple of forks; lay the pieces of dough on a tin and bake them for ten minutes. A light loaf, made with new milk and a little butter, when thus pulled in pieces, makes excellent rusks. A sweet light cake treated in the same way is also very good. Or, spread thin shavings from a stale loaf of bread upon a dish, or upon the tin tray of an American oven, dry them *very gradually* till they are quite crisp, and let them remain till they

are of a pale straw colour. Remove them from the fire, and as soon as they are cold, serve them immediately, piled upon a napkin. When well managed at a very gentle heat, they will retain their crispness for several hours, and it may be renewed by heating them again.

Varieties in Bread making.

131. In making bread, wheat meal may be mixed with the flour or meal of other grains; as of barley, oats, rye, rice; with fruit, as apples, raisins, etc.; or with farinaceous roots and tubers, as potatoes, carrots, parsneps, beet, turnips, etc. The meal of other grains is generally added in the proportion of one-third to two-thirds of wheat meal; or one-sixth of boiled rice to five-sixths of wheat meal or flour. Perhaps a better proportion is a pound of rice to a stone of meal. Boil the rice till soft, but not to a pulp; mix it when reduced to the proper temperature with the meal, and make up the bread as usual. This method keeps the bread rather moist. Cakes and pastry generally may be rendered less tenacious, and a degree of shortness or brittleness may be communicated to them by adding starch or sugar, or the flour of such grains, roots, etc., as abound in starch (34).

Starch, arrowroot, rice-flour, farina of potatoes, and other amylaceous substances, when made into a jelly with hot water, and added to the flour and yeast instead of water, are partially converted into grape sugar by the action of the diastase of the yeast (5 and 6) and by the heat of the oven, thus producing a sweet wholesome bread. Salep also is employed for the same purpose; one ounce of salep dissolved in a quart of water being sufficient for two pounds of flour.

The following mixtures may be tried:—

Two pounds of wheat meal; one pound of rye meal.

One pound of wheat meal; one pound of oatmeal; half a pound of potatoes.

Two pounds of wheat meal; one pound of maize meal.

One and a half pound of wheat meal; half pound of rice.

One pound of rye meal; quarter pound of rice.

One pound and a half wheat or rye meal; half pound of pea or bean meal.

The maize meal may be kneaded to the dough of the wheat after it has been raised by the yeast. It is better, however, to boil the Indian meal for two or three hours, and then mix it with the wheat meal (27).

The pea or bean meal is rendered much milder if steeped in water, or boiled, previously to mixing it with the wheat meal.

Potatoes assist fermentation and render the dough lighter. Boil or steam the potatoes, then bruise them well and dry them; pass them through a wire sieve, and use the flour in the proportion of one pound to two pounds of wheat meal. Or, take the same quantity of potato-fibre from which the starch has been removed, wash it in two waters, place it for an hour on a sieve to drain; add to it in its raw state the usual quantity of yeast, water, and salt, let it stand an hour, then work it well with the flour. It will require very little water, but a longer time to rise.

Or mash smoothly three or four well boiled potatoes; add as much hot water as will make a batter; then add gradually a small plate full of warm flour and the yeast, beating the whole well. Place the mixture before the fire for two hours or less, and when well risen, proceed to make the bread with it in the usual way.

Apples.—Take from two to four pounds of meal or flour of wheat and one pound of apples; pare, core, and bake or stew the apples with a little water, then beat them up warm with the yeast, etc., let the dough rise eight or ten hours, then make it up into long loaves or rolls and bake in a slow oven. Little or no water will be necessary. Or, peel and core the apples and boil them till tender; pulp them through a coarse sieve and mix them with twice their weight of dough, made of wheat meal or flour.

Carrots, Parsneps, Beet and Mangel-wurzel.—Take three pounds of any one of these roots to four pounds of wheat meal or flour; wash or scrape, and then grate the root to a pulp; it is also advisable to rub it through a sieve; add the yeast, etc., and about three quarters of the flour. Let the dough stand two hours and a half, and when it has risen, add the remaining flour, knead it well, and proceed as before directed.

Take equal quantities of Indian meal, rice, and good baking apples. Soak the Indian meal for two hours, and remove everything that floats on the top of the water. Boil each of the three separately,

the meal two hours or more, the rice and apples till tender; mix the three together, and turn them on a dish or board till cold. Make the dough into cakes with a little soda or baking powder and bake in the oven or over the fire.

Turnips.—The proportion recommended is two pounds to one pound of wheat meal. Take one pound of mild raw turnips; pare, divide, and boil them till quite soft; squeeze them in a cloth, so as to remove as much water from them as possible, by which means much of the unpleasant flavour will be removed; mash them well and mix them intimately with the yeast, meal, etc., as directed for apples.

To make Yeast.

132. As good brewers' yeast cannot always be procured, an excellent substitute may be formed as follows:—Stir one pound of wheat flour or half a pound of flour and half a pound of boiled potatoes into a gallon of cold water; boil the whole twenty minutes; then if flour only has been used, add four ounces of coarse sugar, keep the mixture in a warm place two or three days, then pass it through a sieve and pour it into a stone jug for future use. The jug should be well corked and kept in a cool place. If a little yeast can be procured, it may be added when the mixture is nearly cool; let it stand all night in a warm place, then stir it up well and pour it into the jug. Or, boil one ounce of hops during twenty or thirty minutes in four or five pints of water and strain it, mix one pound of flour with a little cold water, and pour the hop water while boiling to it, and when new-milk warm, add half a pint of yeast, let the whole stand twenty-four hours, and put it into a stone jug, as above. Fourteen pounds of flour will require from half a pint to a pint of this yeast. The dough thus made should be kept warm, and it requires a longer time to rise than when formed with brewers' yeast.

Another. Boil two ounces of the best hops in four quarts of water for half an hour, strain the liquor and let it cool down to the temperature of new milk; then put in a small handful of salt and half a pound of brown sugar; beat up one pound of the best flour with some of the liquor, and then mix all well together. Let

the whole stand two days, then add three pounds of potatoes boiled and mashed, let the mixture stand another day, then strain it, when it will be ready for use, and should be put into bottles. It should be stirred frequently during the making, and kept near the fire. Before using the yeast, shake the bottle well. It will keep two months in a cool place.

RICH CAKES, FANCY BISCUITS, ETC.

133. Bread, buns, rolls, biscuits, and cakes in great variety are formed by adding cream, butter, eggs, sugar, currants, raisins, etc., and although such mixtures deviate considerably from a simple diet, and must be injurious to health when freely indulged in, yet our present social condition requires that directions should be given for forming some of these compounds.

As general rules, when well understood and carefully observed, are likely to lead to more satisfactory results than an endless number of receipts for buns, cakes, biscuits, etc., the former will be adhered to wherever it is found practicable.

Preliminary Observations.

134. *Flour.*—For all light cakes, and finer kind of pastry, the flour should be well dried, mixed up warm, and previously sifted, if thought desirable. When butter is used, the flour should be allowed to become quite cool again, before the butter is mixed with it.

Yeast.—Brewers' yeast should be purified by repeatedly washing it in cold water, as directed (125). Sixteen ounces of flour, when much butter, sugar, or fruit is used, require about one table spoonful of good yeast, or a quarter of an ounce of German yeast (123).

Or, one quarter of an ounce, or a tea-spoonful of baking powder.

Or, one quarter of an ounce of bicarbonate of soda, and one quarter of an ounce of hydrochloric acid.

Or, one quarter of an ounce of bicarbonate of soda, and half a pint of butter milk.

Butter.—See 47.

Eggs.—See 53.

A little yeast beaten with sugar and the yolk of an egg will render a cake much lighter than the addition of any quantity of eggs or butter, but the latter articles will of course add much to its richness. When eggs are added to dough it should be well stirred and beaten, but not kneaded; it should then be put in tins and set to rise.

Eggs should not be added to any preparation the temperature of which is not below 159°, or they will coagulate, and when added with cream, they should be previously well beaten with it. When eggs, spinach juice, or any other albuminous articles are added to fluids, they should not be permitted to boil afterwards. Boiling milk or any other hot liquid poured on eggs, should be added very gradually, and the whole should be stirred briskly till thoroughly mixed.

If the whites of eggs are required without the yolks, the latter should be used for custards, puddings, etc., and if not wanted for several hours, beat them up with a little water, and put them in a cool place, or they will become hard and useless.

Sugar.—See 5.

Sugar should be reduced to a fine powder, and sifted through a fine hair or lawn sieve, and then mixed well with the flour, the refined sugar being always preferable except for common purposes. When milk or other fluid is used it should be warmed, and the sugar may be dissolved in it instead of being mixed with the flour. See also 117.

A very little salt is said to improve all sweet cakes, puddings, etc., but it should be very slightly perceptible to the taste. About a tea-spoonful of salt to a pound of sugar (55).

Lemon or orange peel should be pared very thin, to avoid the bitter part, and beaten to a paste with a little sugar in a marble or Wedgewood mortar, and then mixed with a little cream or milk; or, rub the peel with pieces of loaf sugar, which should be afterwards pounded with the remainder of the sugar. When the juice only of lemons or oranges is wanted, chop the peel small, put it in

small pots for future use, and cover it well. Lemon juice should not be added till the other ingredients have been well mixed; stir it in briskly by degrees, otherwise the milk and eggs will be curdled by it.

Caraway seeds, ginger, and other similar flavouring ingredients should be used in the form of a fine powder, or under that of an essence, made by digesting them in spirits of wine; caraway seeds, however, are frequently used whole.

Almonds, cocoa-nut, and spices should be finely pounded, or the flavour extracted by boiling them in the fluid employed for mixing the ingredients (56, 57, 278).

Currants should be well washed, picked, and dried on a cloth, then set before the fire; if damp they will render cakes and puddings heavy. They are cleaned most readily by putting them in a colander and sprinkling a handful of flour over them. Rub and shake them well, then pour cold water over them; drain and spread them on a soft cloth, with which press them gently, that it may absorb the moisture from them. Spread them on a dish, or tin, and dry them, *very gradually*, in the sun, or before the fire, or in a cool oven. When dry spread them on a sheet of white paper or other white surface, and carefully remove all remaining stalks, stones, etc. Dust them with fine dry flour, shake off the loose flour, and add them while warm to the other ingredients, just before cooking.

Wash raisins well in cold water, spread them out and rub them a little, then put them for a few minutes into boiling water over a very quick fire; this causes them to swell, and develops the flavour; stone them afterwards, and add them as directed for currants.

All ingredients and vessels used in making light cakes should be warm, so as not to check the fermentation of the dough. When all the ingredients have been added, the whole should be well and long beaten, as the lightness of the cake depends much upon the articles being well incorporated.

A slab of marble, or a slate, is the best for making paste upon. For the finer kinds, which contain much butter, the coolest part of the house and of the day should be chosen for the process, and the hands should be previously washed in very hot water.

The less pastry is touched and rolled the better; wetting it much renders it tough.

In the following table and receipts one pound of flour is invariably employed, in order that the proportions of the other articles may be more readily observed and compared with the receipts given by other persons. When any other weight than a pound of flour is used, the quantities of the other ingredients must, of course, be altered accordingly.

A TABLE INTENDED TO CONVEY A GENERAL IDEA OF THE PROPORTIONS OF FLUID, BUTTER, EGGS, AND SUGAR TO ONE POUND OF FLOUR IN THE VARIOUS KINDS OF CAKES, PASTRY, AND PUDDINGS.

NO.	FLUID.	BUTTER.	EGGS.	SUGAR.	ARTICLES.
	pint.	oz.	No.	oz.	
1	¼ to ½	—	—	—	Bread Biscuits
2	¼ to ½	1 to 4	—	1 to 4	Rolls, crumpets, etc., and gingerbread by substituting 8 to 16 oz. of treacle for the fluid.
3	¼ to ½	1 to 4	1 to 2	1 to 4	Tea cakes, muffins, pastry for pies, etc.
4	—	4 to 8	2 to 4	4 to 8	Buns, short cakes, Shrewsbury cakes, etc. pastry for pies, etc., and gingerbread by adding 8 to 16 oz. of treacle.
5	—	8 to 12	4 to 8	8 to 12	Yarmouth biscuits, puff paste. Brioche paste, without the sugar, except ½ oz.
6	—	12 to 16	8 to 12	12 to 16	Queen cakes, plum cakes, castle puddings, etc.
7	—	—	12 to 16	16 to 20	Sponge cakes.

For bread, buns, etc. in Nos. 1, 2, 3, 4, and for Brioche paste in No. 5, add a table-spoonful of yeast, or a tea-spoonful of baking powder. Nos. 5 and 6 include most kinds of batter for puddings, etc., by adding about four pints of milk; or one pint of milk to four ounces of flour.

Rolls, Tea-Cakes, Crumpets.

135. Flour one pound; milk, cream, or a mixture of the two, from a quarter to half a pint, yeast nearly a table spoonful, or German yeast one quarter of an ounce, salt one quarter of an ounce. These may be regarded as the essentials; the additions will be given under each separate article.

Rolls.

Form the dough (115 *d.*) and let it stand to rise. Divide it into six oblong portions; if for dinner-rolls into twelve round balls. Set them to rise, and bake them in a quick oven.

NOTE.—An ounce of butter may be dissolved in the milk; an egg well beaten may also be added to the sponge when risen, and then the whole made up. When not intended for dinner-rolls, any of the following articles may be added:—Sugar one ounce; currants, raisins, caraway seeds, whole or pounded; candied lemon, almonds or cocoa-nut grated; nutmeg, cinnamon, or other flavouring. Rice flour, farina of potatoes, etc., may be substituted for a portion of the wheat flour. See 131 and 129.

Tea-Cakes.

136. Form the dough and let it rise as for rolls, divide it into cakes and bake them in tins, or roll out the dough, and bake the cakes upon buttered tins, or in a pan over the fire. Any of the articles in the previous note may be used for cakes as for rolls. See also 129.

Or bread dough two pounds, butter six ounces, raisins eight ounces, grated nutmeg a little, sugar one table-spoonful.

Or bread dough two pounds, eggs three, sugar two table-spoonfuls, butter six ounces, caraway seeds one tea-spoonful.

The dough should be light and made with water, rolled out, and the other ingredients well mixed in. Work the whole well together; put the dough in tins, about three quarters full; let it rise an hour and a half, and then bake.

A Sally Lunn Cake.

The fluid used should be half milk and half cream; add also one egg, butter from one to four ounces, sugar one ounce. Proceed as above.

Scotch Tea-Cakes.

Flour, etc. as 135. Add one egg, butt r one ounce, sugar three ounces, currants three ounces, and a table-spoonful of cream, the remaining fluid being new milk. Mix and bake as above directed.

Crumpets.

137. The mixture as for rolls, to which add one egg, and use sufficient new milk to make a smooth thick batter. Set it to rise, and when ready add the egg well beaten, and as much more milk as may be necessary to render the whole a rather thick batter; beat out the lumps, but the less it is beaten the better; cover it and set it to rise. When well risen, nearly fill a common sized tea-cup with the batter taken from the top (it must not be stirred up), and pour it upon a bake-stone or iron plate rubbed over with a little butter, and placed over a clear and moderate fire; as soon as the batter appears to set, turn it over with a tin slice, the size of the crumpet; when slightly browned, turn it again on a cooler part of the stone, then pour more batter, taken from the top, upon the hottest part of the stone, taking care it does not burn. As the crumpets are baked, lay them on a clean cloth, cover them lightly with another cloth, but do not lay them upon each other till nearly cold. Either toast them lightly, or lay them on a cake tin, and cover them with a clean wet cloth; set them in the oven, and, when heated through, butter them.

Muffins.

138. To the roll mixture add, butter one ounce and one egg. Prepare the dough or sponge as at 115 *d.*; when well risen beat it twenty minutes with a wooden spoon, form the dough into balls on a board well dredged with flour; cover a tray with a cloth, also well dredged, and lay the balls on the cloth, at such a distance from each other as to prevent them running together; cover them with another cloth, and place them before the fire for twenty minutes; then lay them on a heated plate or stone, arrange the shape and bake quickly. Turn each muffin as the bottom begins to change colour. Rice flour, etc. may be used as for rolls.

Bread Muffins.

139. Take four slices of *bakers' bread*, and cut off all the crust. Lay them in a pan, and pour boiling water over them, only just sufficient to soak them well. Cover the vessel with a cloth, and when it has stood an hour, drain off the water, and stir the soaked bread till the mass is quite smooth, then mix in

two table-spoonfuls of sifted flour and half a pint of milk, and stir in gradually two well beaten eggs. Butter some muffin rings, set them on a hot girdle, and pour into each a portion of the mixture. Bake them brown and send them to the table hot, having first pulled them with the fingers and buttered them. They will be found very light and good.

A Common Seed Loaf.

140. Flour, etc. as 135. Add butter one to four ounces, eggs one or two, sugar six ounces, caraway seeds half an ounce. Less fluid is required when butter and eggs are added.

Form the dough as for rolls, and bake in a tin or deep earthenware dish.

A Spice Loaf.

141. To 135 add butter four ounces, sugar four ounces, eggs one or two, currants four ounces, raisins two to four ounces, a little clove-pepper, cinnamon, nutmeg, candied lemon peel, or other approved seasoning.

Cocoa-nut Bread or Biscuits.

142. To 135 add butter four ounces, sugar four ounces, eggs one or two, grated cocoa-nut three ounces.

Buns.

143. To 135 add butter from four to eight ounces; eggs two to four; sugar four to six ounces; currants or Sultana raisins six ounces. Less milk will be required.

Buns should be formed into a light dough or thick batter. Mix as for rolls.

A Rich Cake.

144. To 135 add butter eight ounces; eggs two to four; sugar eight ounces; almonds two ounces; raisins three ounces; currants from eight to sixteen ounces; nutmeg, cinnamon, etc.; very little warm milk, or milk and water will be required. Mix as for rolls, adding the fruit and seasoning to the light dough, or thick batter just before baking. Bake from two to three hours.

If this cake be thought too rich, leave out a portion of the butter; the quantity of fruit and seasoning may also be adapted to taste.

Another Cake.

145. To 135 add butter four ounces; eggs two; sugar eight ounces; currants eight ounces; candied lemon three ounces; and baking powder instead of yeast. Bake two hours.

Rusks.

146. To 135 add butter two ounces; sugar two ounces.

Form the dough and let it rise as for rolls; roll it into cakes about five or six inches in length, and one or two inches broad, and bake in a moderately hot oven. When baked, and quite cold, cut them in thin slices, and dry them in tins in a moderate oven, turning them over occasionally. If baked in a loaf, cut it when cold into slices, and dry them as above.

Tops and Bottoms.

147. Flour sixteen ounces; butter one ounce and a half; sugar one ounce; milk half a pint; yeast or baking powder as usual.

When the dough is ready, break eight pieces out of twelve ounces of it; mould them round, and place them in straight rows on buttered tins, nearly touching each other; prove them well and bake in a moderate oven. When they are cold, or the day after they have been baked, first cut down each row with a sharp knife, then cut out each separately, and as evenly as possible; finally lay them on their sides, and cut them in halves. Put them on clean tins, nearly touching each other, with the cut side upwards; place them in a moderate oven, and let them become nicely browned.

Dutch Pudding.

148. Flour sixteen ounces; milk quarter of a pint; butter eight ounces; eggs four; yeast one table-spoonful; moist sugar two table-spoonfuls; currants eight ounces.

Dissolve the butter in the milk, and let it stand till lukewarm; then strain it into the flour; add the eggs well beaten and the yeast; beat all together, and let the paste stand an hour before the fire to rise. Beat in the sugar and currants, put the paste into a dish or tin well buttered, and bake it. This partakes of the character of brioche, and may be varied in many ways.

Brioche (Bun).

149. Flour sixteen ounces; butter eight to twelve ounces; eggs four to eight; sugar three quarters of an ounce; yeast one table-spoonful.

Mix as above; or,

Put upon a plate four ounces of flour, half an ounce of fresh yeast, two and a half ounces of warm water; form a soft paste, cover it with another plate, and let it stand in a warm place with a cloth over it till it has risen to two or three times its original size. By making a cross at the top, the effect will be more apparent. If the yeast be too strong, or too much of it, the paste will be bitter; if it rises too long, the nature of the brioche will be changed.

Place on the table the remaining twelve ounces of flour; make a hole in the middle, and put in the butter, quarter of an ounce of salt, half a glass of milk or cream, and the eggs; mix in the flour gradually, and form the whole into a paste; knead it well with the palm of the hand, incorporate the previously formed leaven without working the paste too much.

Dredge a clean cloth, with which cover a wooden bowl or terreen; place in it the paste covered with the cloth, and let it stand twelve hours in a warm place.

Brioche paste should be neither too soft nor too firm; if too soft add more flour, if too firm add more eggs. It should be a little finer than paste for bread. Press it out and fold it five or six times with the ends towards the centre; let it stand again three or four hours covered with a cloth. Press it out twice, and turn the ends to the centre without adding more pressure.

Baba.

150. Before putting the brioche paste into moulds, add from four to ten ounces of raisins and one-third of a table-spoonful of saffron, with eggs, etc.; currants and candied citron may also be added, if approved.

Gâteaux de Sève.

151. Use the same kind of paste as for brioche, but instead of baking it in moulds, roll it about the thickness of a finger and

twice the length, plat three of them together, cover them with egg. and bake in a moderately hot oven.

Rice Cakes.

152. Rice sixteen ounces stewed in a pint of water, add two pints of milk, four ounces of butter, grated lemon peel, or nutmeg, or cinnamon; boil till thick; then add two well beaten eggs, a little salt, and four ounces of sugar; put it in a buttered bread-tin or pan, bake one hour. Serve with sugar or jam over it.

Gâteau de Riz.

153. Rice eight ounces; milk or milk and cream two pints; butter three to four ounces; sugar six ounces; salt a little; rind of a lemon grated, or the milk flavoured with cocoa-nut, or vanilla, etc., yolks and whites of six eggs. Wash and drain the rice, then swell it in the milk till tolerably tender; add the butter and sugar, salt and lemon rind; simmer the whole till the rice is swollen to the utmost; let it cool a little and then stir in quickly and by degrees the yolks of eggs. Butter a stew-pan evenly, and strew bread crumbs all over it; whisk the whites to a snow, stir them gently to the rice, and pour the mixture softly into the pan and bake immediately at a moderate heat for an hour; then turn it out of the pan or mould. It should be well browned and quite firm. It may be covered at the instant it is served with strawberry, apple, or other clear jelly.

Shrewsbury and other Cakes.

154. *Shrewsbury Cakes.* — Flour sixteen ounces; butter four to eight ounces; eggs one to four; sugar eight to twelve ounces. Mix (116 *b.*) the whole into a stiff paste, and roll it thin and smooth. Cut out the cakes with a paste cutter or wine glass; bake them on tins in a moderate oven.

These may be varied by adding caraway seeds, grated cinnamon, or nutmeg, etc. to taste; also a little cream or milk when required.

Tea-Cakes, Plum-Cakes, etc., may be made with the same ingredients; adding from eight to sixteen ounces of currants, or raisins, lemon rind, etc.

155. *Short Cakes.*—Flour sixteen ounces; butter four to eight ounces; one egg; sugar four ounces. Beat the egg with a little water; mix and roll the paste into little balls, flatten them and bake them dry and crisp. A little cream may supply the place of a portion of the butter; currants, caraway seeds, etc., may be added.

156. *Benton Tea Cakes.*—Flour sixteen ounces; butter four to eight ounces; add sufficient milk and roll the cakes thin; bake in a pan or on tins in an oven.

157. *Imperials.*—Flour sixteen ounces; butter four to eight ounces; eggs one to four; sugar eight to twelve ounces. Add currants six ounces, candied peel and the grated rind of a lemon. Flour a tin lightly, and with a couple of forks place the paste upon it in small rough pieces, two inches apart. Bake them in a very gentle oven, fifteen or twenty minutes, or until they are of a pale brown colour. They are called Jumballs when the paste is rolled out, cut into narrow shreds, and formed into rings or knots, etc. Bake them rather quickly.

158. *Snow Cakes.*—Flour sixteen ounces; butter four to eight ounces; whites of eggs four; sugar four to eight ounces. Add a few drops of essence of lemon and use potato flour instead of wheat flour. Beat the butter to a cream; whisk the eggs well and mix them gradually with the butter; beat in the flour, then the sugar (116 *e*). Beat the whole well and pour it into a very *shallow* buttered pan (earthenware is preferable to tin), and bake very slowly. It must not be browned either at top or bottom, and when baked it should be cut into pieces before it is taken out of the pan to prevent its being broken. When properly baked, it is very attractive in its appearance.

159. *A Rich Plain Cake.*—Flour sixteen ounces; butter eight ounces; one egg; sugar eight ounces. Add currants twelve ounces; citron, orange peel, nutmeg.

160. *Scotch Bread.*—Flour sixteen ounces; butter eight ounces; sugar eight ounces; almonds four ounces; candied lemon two ounces. Form the whole into cakes about half an inch thick.

161. *Venetian Cakes.*—Flour sixteen ounces; butter eight ounces; sugar eight ounces; yolks of eggs four; almonds seven ounces; bitter almonds one ounce.

162. *Cracknuts.*—Flour sixteen ounces; butter eight ounces; eggs eight; sugar twelve ounces.

163. *Cracknells.* — Flour sixteen ounces; butter eight ounces; eggs eight; sugar sixteen ounces. Add four spoonfuls of cream and a few caraway seeds. Roll the paste out as thin as paper; rub it over with white of egg, dust fine sugar over; cut it into cakes and bake them.

164. *Yarmouth Biscuits.*—Flour sixteen ounces; butter eleven ounces; eggs four; sugar eleven ounces. Add eight ounces of currants.

165. *Small Cakes.*—Flour sixteen ounces; butter twelve ounces; yolks of eggs four; sugar eight ounces. Add currants, candied lemon, and almonds cut small.

166. *Naples Biscuits.*—Flour sixteen ounces; eggs one to four; sugar eight to twelve ounces. Mix the flour with water instead of milk; add four spoonfuls of orange-flower water; make the whole into a rather stiff batter and pour it into paper moulds; put them on tins to bake, sift fine sugar over them, and bake quickly.

167. *Galette.*—Flour sixteen ounces; butter twelve ounces; eggs two; sugar two tea-spoonfuls; salt quarter of a tea-spoonful; cream one gill and a little milk if necessary. Work all well into a good stiff paste; roll it into a cake three quarters of an inch thick; egg it over; score it with a knife in diamonds or any other shape; bake for about half an hour in a rather hot oven. Sprinkle sugar over and serve.

168. *Diet Cakes.*—Flour sixteen ounces; eggs six; sugar sixteen ounces; milk or water half a pint.

169. *Drop Biscuits.*—Flour sixteen ounces; eggs eight; sugar twelve ounces; caraway seeds one ounce. Drop the batter on white paper about the size of half a crown.

170. *Marlborough Cakes.* — Flour sixteen ounces; eggs eight; sugar sixteen ounces; caraway seeds two ounces. Bake in soup plates or in tin pans.

171. *Rice Cakes.*—Ground rice sixteen ounces; or wheat flour eight ounces and ground rice eight ounces; eggs twelve; sugar sixteen ounces; the peel of one lemon grated and half the juice.

172. *Queen Cakes or Portugal Cakes.* — Flour sixteen ounces; butter twelve to sixteen ounces; eggs eight to twelve; sugar twelve to sixteen ounces. Add currants eight ounces. Bake in small tin pans, buttered, in a brisk oven for about twenty minutes. Grated lemon rind may be added.

173. *Sutherland or Castle Puddings.*—The same mixture as for Queen cakes, baked twenty to twenty-five minutes in buttered cups. (See 383.)

174. *Gâteau de Madeline.*—Instead of currants add a little grated lemon peel to the above. A little grated chocolate added forms Gâteau de chocolat. Bake in tins or patty pans in a rather brisk oven, and draw them towards the entrance of the oven when sufficiently coloured.

175. (*a.*) *Seed Cakes.*—Flour sixteen ounces; butter twelve ounces; eggs eight; sugar twelve ounces; caraway seeds three quarters of an ounce. Butter the pan and sift sugar over the cake. A few drops of lemon may be added. Mix as at 117 *d*, and immediately bake in a buttered mould in a moderate oven.

(*b.*) Or, flour eight ounces; ground rice eight ounces; eggs ten; sugar ten ounces; caraway seeds three quarters of an ounce.

176. *Plum or Pound Cake.*—Flour sixteen ounces; butter sixteen ounces; eggs eight; sugar sixteen ounces. Add currants sixteen ounces; raisins four ounces; almonds four ounces; orange peel and candied lemon four ounces each, shred fine. Some supply the place of these with caraway seeds one ounce; and one large tea-spoonful of baking powder. Mix as at 117 *d*. Butter the tin or pot, line it with buttered paper, and fill it about three-quarters full. A less quantity of butter and sugar also makes a good cake.

NOTE.—Flour eight ounces and ground rice eight ounces may supply the place of flour sixteen ounces in any of the above.

177. *Sponge Cakes.*—Flour sixteen ounces; eggs twelve to sixteen; sugar sixteen to twenty ounces. Mix as at 117 *e*, or *f*. The flour should be well dried and sifted. Ten or twelve drops of essence of lemon may be added, or the rind of a lemon rasped on the lumps of sugar.

178. *Savoy Biscuits or Cakes.*—Put the above batter in a

biscuit funnel and draw it along clean white paper until you have formed biscuits of the length and thickness required; sift sugar over them and bake in a quick oven, but watch them carefully, as they are very soon baked.

179. *Chesterfield Biscuits.*—Proceed as above, adding an ounce of caraway seeds.

180. *Cocoa-nut Biscuits.*—Grate the inside of the cocoa-nut; add to it the whites of two eggs and four ounces of loaf sugar pounded. Mix the whole well and divide it into small rocky pieces. Put them on a slightly buttered tin and bake in a rather slow oven.

Gingerbread, Parkin, etc.

181. These mixtures of flour, treacle, etc., are usually raised by means of alkalies and acids. When carbonate of potash, soda, or magnesia is added, the glucic and melassic acids of the treacle act upon it and set carbonic acid free (5 and 123). Mix the flour and alkali thoroughly, then dissolve and add the acid; let the butter, treacle, and spices be added in the usual manner, dissolve the butter and pour it with the treacle among the flour and alkali. The whole must then be incorporated and formed into dough by kneading, then set it aside for a period varying from half an hour to an hour; it will then be ready for the oven. Potash imparts a disagreeable alkaline flavour to the dough unless it be disguised by some aromatic ingredient. A very small portion of baking powder may be used instead of the alkali and acid. Or, mix the sugar and flour, rub in the butter, add the spices, make a hole in the middle to receive the treacle; put the carbonate of soda, magnesia, or other alkali in the middle, moisten it with a little water to dissolve it, pour in the treacle, and after stirring in some of the flour, pour over it the acid diluted with water; mix the whole well and let it be rather a soft dough than a stiff paste. Or, mix the alkali and flour very intimately together, rub in the butter, add the sugar, and ginger also if approved, a quarter of an ounce of ground caraway seeds, lemon rind, candied lemon, essence of lemon, etc. If eggs are used, let them be well whisked, then add them and the treacle gradually to

the other ingredients and beat the whole well. Pour it in the state of a thick batter or thin paste into shallow tins, or loaf tins till half full, then bake during an hour and a half, or two hours.

Ginger Snaps and Nuts.

Mix the ingredients as above, roll the paste rather thin, and cut it into cakes, or drop it so as to form nuts. Or make the dough into small long rolls, cut them into portions as large as a nutmeg, dust them with flour and roll them in a sieve to make them round; lay them on buttered tins, two inches apart, flatten them a little, wash the tops with milk, and bake at a low temperature.

Honeycomb Gingerbread.

Mix the flour, butter, and sugar, add the grated rind and juice of a lemon, and as much treacle as will render the whole sufficiently thin to spread on sheet tins previously buttered; when baked, cut it into four or five inch squares, which, while hot, turn once round a wooden roller about an inch in diameter.

Parkin.

182. Mix as above directed, using oatmeal instead of wheat flour; add two or three drops of the essence of lemon. The quantity of treacle may be varied so as to form either a stiff paste or a batter; if the former, roll and cut into cakes half an inch thick, if the latter, drop it upon tins in any form that may be preferred. Wash it over with milk and egg, and bake it in a slow oven. The eighth of an ounce of baking powder may be mixed with the meal.

The following are the usual proportions of flour, etc.—

Gingerbread, etc.

No. 1. Flour sixteen ounces; butter one to four ounces; sugar one to four ounces; treacle eight to sixteen ounces; ginger half an ounce to two ounces.

No. 2. Flour sixteen ounces; butter four to eight ounces; eggs one to four; sugar four to eight ounces; treacle eight to sixteen ounces; ginger half an ounce to two ounces.

No. 3. Flour sixteen ounces; butter eight ounces; sugar sixteen ounces; treacle sufficient to make a thick batter.

To any of the above may be added lemon rind, etc.

For mixing, etc., see above.

Parkin.

Fine oatmeal sixteen ounces; butter four ounces; sugar four ounces; treacle sixteen ounces; ginger half to two ounces.

Four ounces of wheat flour may be substituted for four ounces of the oatmeal, and this will be preferred by many persons.

PASTRY FOR PIES, PUDDINGS, ETC.

183. The marble slab or board, paste rollers, tin cutters, stamps, and hands should be perfectly clean.

For observations on the flour, butter, etc., especially for fine pastry, see 47, 134, etc.

Indian meal, rice flour or potato flour, may be used advantageously with wheat flour. See 122, 131. A little salt or sugar or both may be added. See 55, 134. Pastry should be formed rather too dry than too moist; if made too moist at first, the crust will eat tough, and the flour added afterwards cannot be mixed well with the paste. When too moist it is also liable to be scorched in the oven.

Cold water is to be preferred to either warm water or milk for mixing with the flour (except when yeast is used), but in very cold weather the chill may be taken off.

Pastry should be made quickly, touched lightly, and baked as soon as possible after it has been made.

The water should be added gradually, and the whole gently drawn together with the fingers of one hand; when sufficient water has been added, the paste should be lightly kneaded till it is as smooth as possible. When the temperature of the atmosphere is below 50°, the butter should be squeezed and worked with the hand to soften it, and it should be brought to the same consistency as the paste before it is worked in. When the temperature is above 60°, fine pastry should be worked in the coolest place

possible, and the butter should be rendered firm by placing it over ice, or by putting the vessel which contains it in another vessel, holding a solution of salt and saltpetre in water. The paste also, between the intervals of rolling, should be kept in a cool place, or as recommended for the butter. All the ingredients should be well and evenly mixed. A *small* quantity of baking powder or carbonate of ammonia, makes pie-crust light, and may in part supply the place of butter. See 123 and 134. When either of these is used, it should be mixed well with the flour in a dry state (115 *b*).

In baking, the finer kinds of pastry should have a sufficient degree of heat to raise them quickly, but not so high as to colour them too much before they are done. The oven door should remain closed after they have been put in, and not opened again till the paste has set. Large raised pies require a steady and well sustained heat.

The varieties of Pastry may be included in five divisions, viz.: Bread Crust, Cream Crust, Short Crust, Puff Paste, and Feuilletage.

(1.) Bread Crust.

184. Take a pound of white bread dough after it has risen sufficiently; roll it out very thin and square, and place a ball of butter, weighing from two to four ounces, in the centre; fold the paste round it, then roll it out lightly two or three times, folding the ends always to the centre as for Puff Paste. Pastry formed by yeast, becomes dry by long keeping.

Remarks.—The dough may be raised either with yeast or with baking powder; the paste may have butter distributed over it in small pieces, and then folded and rolled out as above; some prefer dough made with milk rather than water; it is, however, liable to become dry sooner than when made with water; the dough used for tea-cakes (135), will answer very well; some add a little salt, others sugar, especially when for sweet pies, a well-beaten egg may be substituted for the butter; or two table-spoonfuls of salad oil by those who prefer it to butter. The yolks of eggs are preferable to the yolks and whites mixed.

(2.) Cream Crust.

185. Mix a little salt with sixteen ounces of flour, and add gradually sufficient cream to form a smooth paste. It may be made richer by adding from four to six ounces of butter rolled in as above. Handle the pastry lightly, and put in the oven as soon as ready.

(3.) Short Crust.

186. Flour sixteen ounces; butter six to eight ounces; yolks of eggs two to four; sugar one to two ounces; water a large wine-glassful if necessary.

Rub the butter and flour well together on a slab; make a hole in the centre, in which put the sugar, eggs, and water; mix them well, then draw in the flour; mix and work the whole lightly.

Some recommend the following method: Rub the butter and flour together till they break into crumbs, add the salt and sugar, and mix them into a rather stiff paste, with as little water as possible, adding it by degrees. This paste may be either used for pies or made into cakes and baked in an oven or frying pan. When less butter is used, milk or cream may be substituted for the whole or part of the water. When yolks of eggs and cream are used, beat the yolks well, mix them with the water and strain; then add them with the cream to the flour and sugar, etc., as above.

For savoury pies and puddings, a little chopped parsley, onion, thyme, or mushrooms may be substituted for the sugar.

A Good Short and Wholesome Crust.

187. Flour sixteen ounces; butter three to four ounces; baking powder one tea-spoonful; water rather less than half a pint.

Mix the baking powder intimately with the flour, well dried; rub in the butter, then add the water and mix the whole with a wooden spoon without kneading it; take it from the bowl and roll it, fold it in three, and roll it again, and, if not sufficiently smooth roll it a third time. The addition of a little cream would be an improvement. This crust, when well made, is very agreeable and wholesome; it is light without being rich, differs little from good bread, and, with attention, any one may suc-

ceed in making it. There would be fewer complaints against pastry if less butter and other fatty matters were employed in forming it, and were it not used in connection with animal food, as in meat pies.

Another Good Crust.

188. Put some light white bread into a basin, and add a pint of boiling milk; let it remain closely covered till cold; rub a little butter in, and as much flour as will render it of proper consistency; add a little salt, mix the whole together, and roll it out as required.

189. Or, flour sixteen ounces; butter three ounces; white and yolk of an egg well beaten; yeast one table-spoonful.

Warm the butter in half a pint of new milk, let it stand till lukewarm, mix well all together, and let the dough stand to rise; roll it out and bake as quickly as possible.

Pastry for Raised Pies.

190. Use more water and less butter than in 186, say from two to four ounces of the butter. Dissolve the butter in the water, break the eggs, yolks and whites, into the flour; then skim the butter from the top of the water and mix it with the flour, adding as much of the water as is requisite to make a stiff paste; work the whole till quite firm and smooth; put it into an earthen pan or bowl, covered close, and set it before the fire for ten or fifteen minutes; if the paste appears too soft dredge to it a little flour, and work it smooth. Take as much of the paste as is required, mould it into the shape of a sugar loaf, flatten and smooth the sides with the palms of the hands, then press the middle of the point down to half the height of the paste; form it into a proper shape by pressing it with the fingers, and make the cylindrical side of equal thickness throughout. Put in the ingredients, roll out the paste for the top, and join it well with white of egg. As a protection, the pie may be surrounded with writing paper before it is baked.

(4.) PUFF PASTE.

191. Flour sixteen ounces; butter eight to twelve ounces; yolks of eggs four; water less than half a pint; or cream six to eight spoonfuls. Mix according to No. 3, for short crust.

(5.) Feuilletage or Fine French Puff Paste.

192. Flour sixteen ounces; butter twelve to sixteen ounces; yolks of eggs two to four; flour dry and sifted; butter free from salt. See 48.

See also preliminary observations (183).

Put the flour on the slab, make a hole in the centre, in which put a tea-spoonful of salt, and sufficient water to dissolve it; then mix the whole lightly with cold water to a rather soft paste; when eggs are used mix them with the water before it is added to the flour; some add four ounces of the butter at the same time. Dredge a little flour occasionally, to assist in clearing the whole from the slab, and let the paste remain on the slab in a cool place from two to twenty minutes. Then roll it out to about three quarters of an inch thick; lay the butter previously prepared and brought to the same consistency as the paste, in the centre, flatten it a little with the hand, and cover it with the paste by turning the ends to the centre; roll the paste till it is about half an inch thick, dredging a little flour first over the slab and paste roller; fold it by turning over one-third at one end, and then folding the other end over it; this is called one turn. Repeat the rolling and turning six times in summer, and seven in winter; allow a quarter of an hour between the turns; keep the paste meanwhile in a cool place, and dredge the paste and slab each time lightly with flour.

When less butter is used, fewer turns will be required, but the paste will not be so light. It should be rolled lightly, and of equal thickness each time, and care should be taken that the butter does not break through the paste. Folding the paste in two or doubling it is called half a turn.

Some break the butter in small pieces and distribute it equally over the paste, then dredge flour over it and fold it, etc. Others add about three or four ounces in pieces, each time the paste is rolled out.

When butter is rolled into the paste at several intervals, the pastry, during the baking, becomes flaky or divided into thin laminæ, by which it is distinguished from short crust.

Rice Paste for Sweets.

193. Boil four ounces of ground rice in a small quantity of water, strain off all the moisture and dry it well; beat it in a mortar with half an ounce of butter, and one egg well beaten. This paste is very much preferred by some for tarts.

Paste for Stringing Tartlets.

194. Mix one ounce of fresh butter with your hands in four ounces of flour and a little cold water; rub the paste well between the board and the hand, till it begins to string; cut it into small pieces, roll it out and draw it into fine strings; lay them across each other or form them into figures, and bake immediately.

Potato Paste.

195. Add an egg or some butter to boiled and finely bruised potatoes, whilst they are warm; before the mixture becomes cold, roll it out on a well floured board; cover the dish with it immediately, and bake.

Nouilles for Soup.

196. Flour sixteen ounces; yolks of six eggs and whites of two; salt, finely minced parsley, grated nutmeg, pepper, and water sufficient to make a stiff paste. Spread it out very thin, and cut into strings. A little flour should be sprinkled over them to prevent them sticking together. Drop them by degrees into boiling soup, etc., and let the soup simmer half an hour.

BATTER.

197. Batter is the meal or flour of grain, pulse, etc., in a more diluted state than dough or paste, and has been already alluded to in some of the preparations for light cakes. It is of extensive use in cookery for puddings, pancakes, fritters, omelets, etc.; and will be further noticed under these respective heads, For the present it will be sufficient to describe the mode of making it.

Batter for Frying Vegetables, and for Fruit Fritters.

198. Flour twelve ounces; butter two ounces; boiling water

nearly a quarter of a pint; cold water three quarters of a pint; salt half a tea-spoonful; whites of eggs two, beaten to a froth.

Cut the butter in small pieces, pour upon it the hot water, and when it is dissolved add the cold water, taking care that the whole be about the temperature of new milk; mix it by degrees with the flour and salt, and just before it is used stir in the beaten whites of eggs.

Frangipane.

199. Flour two ounces; eggs three or four. Moisten the flour with a little milk; heat the two together in a saucepan; add the eggs and stir the whole till cool enough to be made up with the hand.

Or, steam some potatoes, beat them in a mortar, put them in a basin, and add some eggs and a little butter, salt, rasped citron, some bitter macaroons, and sugar or not, according to taste.

Or, flour four table-spoonfuls; eggs four.

Mix them well together, dilute with a quart of new milk, in which some white sugar has been dissolved, add six macaroons finely powdered, and a gill of orange-flower water. Place the mixture over the fire, and as it becomes thick stir it well; then pour it over pulped apples or other fruit in a dish, and bake in a gentle oven for half an hour.

Boiled Meal, Flour, etc.

200. Various names have been given to meal or flour boiled in water or milk, according to the substance employed, and its relative proportion to the fluid, as—Pudding, Burgout, Porridge, and Gruel.

Wheat coarsely ground and boiled during three or four hours with a succession of water and a little salt, is an excellent and pleasant remedy for constipation. "It effects quite a revolution in the economy of health, when taken in sufficient quantity (twelve ounces), either as a part or whole of the breakfast, or instead of pudding and vegetables at dinner. When the stomach will bear sweet substances, honey, molasses, etc., may be added with advantage. A moderate degree of fluidity, *i.e.*, less than that of boiled rice or hominy, increases the laxative power."

Hasty Pudding and Burgout.

201. Meal or flour eight ounces; water or milk one pint. Into the boiling milk, stir the flour gradually, let it boil a few minutes, during which time it should be constantly stirred and beaten. A little salt, an egg, a little butter and sugar, or seasoning, according to taste, may be added. Two bay leaves may be first boiled in the milk, then removed, and the yolk of an egg, beaten up with a spoonful or two of milk.

In this manner may be used Indian meal, oatmeal, etc. A pint of water gradually added to eight ounces of oatmeal, the whole made quite smooth, and then boiled a quarter of an hour, is called burgout. Butter, salt, pepper, etc., may be added as above.

Porridge, Stirabout, Polenta, etc.

202. Wheat meal, oatmeal, Indian meal, semolina, ground rice, polenta, hominy, etc., three or four ounces; water one pint. Boil the water, and add a little salt, about the one-sixteenth of an ounce, sprinkle in the meal very gradually and carefully, till of a sufficient consistency; stir it well all the time with a porridge-stick, which should be an inch or more broad at the bottom; boil gently fifteen or twenty minutes. Add a little more boiling water, and boil it five minutes longer; this renders it smoother. Pour it on plates or into moulds, and serve with treacle, milk, preserve, etc.

The usual way is to make a hole in the middle, with the spoon, add a piece of butter as large as a nutmeg, and upon it a spoonful of brown sugar or treacle Eat it from the circumference, and dip each spoonful in the butter and sugar.

Or, spread a small quantity of butter over it, then sprinkle coarsely powdered cheese over it.

Every particle of meal should be stirred into the boiling fluid with one hand, as fast as it reaches the surface from the other, or it will run into knots; the boiling also should be well sustained all the time. Fine meal requires more water than coarse, and the latter requires more boiling. The more finely the meal is granulated the better, provided it runs freely from the fingers by the assistance of the thumb.

Indian meal is better if boiled gently for half an hour or an hour.

203. A preferable mode of making porridge, especially when the meal or flour is fine, is to steep the meal in as much cold water as it will absorb, in which state it may remain several hours; stir it into the boiling water and continue the stirring till the porridge boils fast and thickens, which may be in five or six minutes; then remove it to where it will just keep boiling for twenty minutes without burning. A double saucepan, the lower part containing water, is the best for making porridge in.

While Indian meal is steeping, remove all the light floating particles.

The steeped meal may be added to milk if preferred, and heated in a slow oven for two hours, until all the milk has been absorbed. When hominy is used it should be steeped during twelve hours, or more, and boiled or creed till sufficiently soft. Cold porridge may be cut into slices and fried in butter; fried onions, parsley, pepper and salt may be added. It may also be sliced and cheese toasted upon it; or cut in thin slices and toasted before the fire, or on a gridiron, and eaten instead of bread, either in milk or in any kind of soup or pottage: or it may be eaten cold without any preparation, with a warm sauce made of butter, molasses or sugar, and a little vinegar. It may also be boiled in milk.

The meals of two or three grains may be mixed, as one-third rice meal, and two-thirds oatmeal. See 131.

Savoury Porridge.

204. Oatmeal two or three table-spoonfuls; onions two or three ounces; milk one pint; butter a quarter of an ounce; pepper and salt one tea-spoonful. Boil the onions in two waters; when tender, shred them fine and add them to the boiling milk; sprinkle in the oatmeal, add the butter, pepper, and salt; boil ten to fifteen minutes, pour it into soup plates, and serve with sippets. Instead of onions, grated cheese may be stirred in with the oatmeal. Cheese with Indian meal or semolina, forms also another variety of polenta, an Italian dish. For sweet porridge add sugar, raisins, currants, etc., instead of the onions and pepper.

Thin Porridge or Gruel.

205. Oatmeal one or two table-spoonfuls; water or milk one pint.

When the water or milk nearly boils, stir in the meal, previously mixed smooth with a little cold water and a little salt; or pour the boiling water or milk to the meal by degrees, and return the whole to the pan. Boil it a few minutes; skim and strain it, if thought necessary, then pour the gruel into basins, with or without toasted bread. It will become smoother and pleasanter by being boiled or simmered longer, or by the oatmeal having been steeped for several hours in cold water before the gruel is prepared. When made with milk it is excellent for breakfast during the winter season, and in Yorkshire is called "milk and oatmeal." It does not agree well with all persons on the first trial, and in such case it should be taken in small quantities, till the stomach can digest it well. It may be enriched with a little butter or cream when oleaginous preparations are desirable.

When a thinner gruel is required, the coarser part of the oatmeal is allowed to settle, then the fluid part is poured off and boiled a few minutes longer. Add sugar, nutmeg, ginger, etc., according to taste. It may be flavoured with cinnamon, a spoonful of preserved black currants, sweet herbs, onions, etc., by boiling any of these in the water about half an hour, and straining it before the flour or meal is added.

One or two yolks of eggs may be beaten, mixed with a little of the gruel, and then added; the pan should be held over the fire, but the gruel should not boil after the eggs have been added (13 366, 471).

The eggs may be added to boiled milk instead of gruel; a little salt and sugar being also added. Ground rice, maize powder, Indian meal, semolina, manna croup, sago, tapioca, arrowroot, salep, potato flour, patent barley flour, revalenta, lentil meal, etc., may be used instead of oatmeal; or two of them may be combined; as, equal quantities of potato starch and oatmeal.

About one ounce of any of the above will be sufficient for a pint of water, and two ounces of sugar; and if boiled till it appears like a clear jelly, and then strained through a sieve or thin cloth,

a nourishing mucilage will be obtained, which may be flavoured with cinnamon, preserved black currants, etc.

Sago and tapioca should be washed in two or three waters previously to being used, and tapioca should be steeped for some hours. See 30.

Oatmeal and Honey.

206. Beat up a table-spoonful of oatmeal, and a table-spoonful of honey with the yolk of an egg; pour upon it a pint of boiling water; then boil the whole a few minutes.

Apple Posset, and Bread or Biscuit Jelly.

207. Boil some slices of white bread in a pint of milk; when the bread is quite soft remove it from the fire, sweeten with sugar and add a little powdered ginger; pour it into a bowl and gradually stir in the pulp of three or four nicely baked apples.

Bread Jelly.—Toast a slice of bread very dry and brown, pour as much water on as will cover it; simmer it very gently, and as the water evaporates add more and continue to simmer it for four hours; strain it, and when wanted for use, add a little lemon-peel, or sugar, and a little new milk.

Biscuit Jelly.—White biscuit crushed four ounces; cold water two quarts. Let the biscuit soak for several hours, boil till reduced one-half, strain, evaporate to one pint; add white sugar one pound, and cinnamon one ounce.

Linseed Tea.

208. Pour two pints of boiling water on one ounce and a half of clean linseed, and half an ounce of bruised licorice root. Let it stand covered near the fire three or four hours.

FARINACEA IN MOULDS, BLANC-MANGE, ETC.

209. Wheat, barley, rice, lentils, and other grains, either whole or in flour; also sago, arrowroot, etc., may be prepared so as to be both useful and ornamental, by boiling them to a proper consistency, and then pouring them into moulds which have been previously scalded, and afterwards dipped into cold water. Let the moulds, when filled, stand in a cool place till the mixtures are

well set, then turn them out of the moulds upon porcelain or glass dishes.

210. 1. Any of the above articles may be creed in milk and sweetened or flavoured according to taste, by previously boiling the sugar, cinnamon, etc., in the milk (*55*). Four ounces of grain will require about a pint or more of milk. The quicker rice or other white grain is creed, the better will be the colour.

Tous-les-mois, arrowroot, ground rice, or three parts ground rice, one part arrowroot, etc., should be previously mixed with a little cold water, then poured to the boiling fluid and boiled about five minutes. These will require more fluid than the whole grain. Thus prepared they have been called blanc-mange; frequently made with milk, isinglass, etc. See 394.

211. 2. The same products may be combined with the juice of fruits and turned into moulds. Remove all discoloured parts, and when necessary, steep the grains in water and dry them with a soft cloth; then simmer four ounces of the grain over a gentle fire in a pint of prepared juice of apples, rhubarb, gooseberries, white currants and strawberries, red currants and raspberries, cranberries, or other fruit, (99); stir the whole frequently before it begins to boil, to prevent it forming into lumps. As soon as the grain is rather tender, add eight ounces of pounded sugar and a dessert-spoonful of lemon juice; when ready, pour it into moulds as above. Arrowroot, etc., should be mixed with a little cold water as above, and then added to the boiling juice previously sweetened, etc.

212. 3. Pour three pints of boiling water upon half a peck of raspberries and red currants mixed; let them stand all night; then strain off one quart, leaving the skin and seeds at the bottom. Simmer four ounces of sago or Scotch barley, rice, etc., in the juice, in an earthen glazed pan, till the whole thickens, but do not allow it to boil quickly. Add eight to ten ounces of sugar, etc., and proceed as above. Barley and other grains should be quite tender before they are put in the moulds.

In winter, currant jelly may be dissolved and used instead of the raspberry and currant juice; also raspberry vinegar, preserved plum-juice, etc.

213. 4. Fill a basin or mould with alternate layers of creed

grain or sago, etc., and baked fruit sweetened; then put it in a cool place. When required, it may be warmed either in an oven, or over boiling water, or before the fire with a plate turned over it. Or line a basin with a thick layer of boiled sago, rice, etc.; spread a thick layer also upon a large plate, and when cold and firm, turn the basin over the plate, and with a knife cut the sago round the edge of the basin; put the parings at the bottom of the basin, then fill it with baked fruit and place the sago which is on the plate as a cover. When required, remove the mould.

214. The milk used for creeing the grain may be flavoured with cocoa-nut, cinnamon, or almonds, etc. (*56* and *57*). Blanch and pound to a paste two ounces of Jordan almonds; stir to them slowly a pint of boiling milk; when the milk has received sufficient flavour from the almonds, squeeze it from them again through a thin cloth and set it aside to cool. Pour the milk upon four ounces of washed, soaked, and drained rice, and bring the whole very slowly to the point of boiling; simmer it gently till rather tender, stirring it occasionally. Add one ounce of butter and two ounces of powdered sugar. When quite tender and dry, press it whilst hot into a mould as above, about an inch thick, fill it with baked fruit, apricot jam, etc.

Farinacea in moulds may be served either quite plain or with a rich syrup of apple juice well flavoured with lemon; or stuck with almond spikes, and covered with custard or mock cream, etc.

TO BOIL ROOTS, TUBERS, ETC.

General Rule.

215. Prepare them as directed at 40; then put them in boiling water, with a little salt in it; let them boil a few minutes, then add so much cold water as will reduce the temperature to 165° or 158°, and keep up the heat to this point till the roots are sufficiently tender, which may be ascertained by probing them with a fork; but red beet should only be tried with the fingers at the thick part of the root. They should neither be pared, cut, nor put into cold water, because albumen and other

nitrogenised matters reside in the epidermis, or in the tissues immediately subjacent, and, as observed under albumen (13), cold water dissolves this principle, and thus the most nutritious portions of the tubers, roots, etc., are either lost by paring or are held in solution by the water. On the contrary, boiling water coagulates the albumen, and thus renders the vegetables containing it more nutritious than they would be if first put into cold water. The flavour and colour, however, of turnips, old potatoes, and other white roots are improved by paring and soaking in cold water previously to cooking (40). The water should be skimmed for white roots, as parsneps, etc., if they have been previously pared. When sufficiently boiled, peel potatoes, pare beet root and turnips, and rub off the skin of carrots, parsneps, and new potatoes with a coarse cloth.

To Boil Potatoes.

216. Select them of nearly equal size, boil them by the general rule for roots, etc., and when tende r, drain the water from them, and let them stand over or by the side of the fire uncovered until all the moisture has evaporated, shaking them occasionally. If they are not wanted immediately, lay a cloth over them, but it is better to peel and serve them without delay. Some put each potato into a clean warm cloth and twist it so as to press all the moisture out and render the potato quite round. This method is advisable when it is intended to mash the potatoes, or to use them for puddings or cakes.

New potatoes should be put into hot water with a little salt in it; older potatoes may be put into either cold or boiling water, but if pared, boiling water is preferable. Young potatoes require to be boiled from ten to twenty minutes; old potatoes from twenty to forty-five minutes.

Jerusalem Artichokes.

217. Boil or rather simmer them from fifteen to twenty-five minutes, or till tender; a few sliced onions are sometimes boiled with them. Serve them with melted butter, cream, or white sauce. The sauce may be thickened with oatmeal.

Turnips, Carrots, Parsneps, Onions.

218. For the time these require boiling, see 60.

Beet Root.

219. See 39. Simmer it two or three hours; when tender, rub off the skin with the hand, or peel it and serve it whole, or cut it in a slanting direction in thin slices Or when the beet has been well washed, roll it in a very thin paste made of flour and water; wrap it in a cloth as for a pudding, and then boil it. It will thus be rendered much sweeter, and not so earthy in flavour as when cooked in the ordinary way. It may be used cold with winter salads or with cheese. It may also be eaten with boiled onion cut in thin slices when cold, and laid on the edge of each other alternately. Oil, vinegar, etc., as at 495 and 496. A little powdered ginger will prevent it lying heavy on the stomach. Cold beet root may be chopped fine, heated in a saucepan with a little cream, a little vinegar and brown sugar added just before serving.

Baked or boiled beet root may be cut in slices, across or lengthwise; seasoned with salt and pepper, then fried and used as sandwiches between slices of bread and butter; or folded up, put on a dish, and garnished with parsley.

Radishes.

220. Boil turnip radishes from twenty to thirty minutes; drain and serve them with melted butter or white sauce. Common radishes should be tied in bunches and boiled, then served on toast like asparagus.

Leeks.

221. Wash, trim, and cut them in equal lengths; split each nearly in two. then tie them in small bunches. Put them in plenty of boiling water with a little salt; boil them twenty to thirty minutes or till tender; removing any scum which may arise; drain and serve them on toast with melted butter.

Salsafy and Scorzonera.

222. Scrape off the dark outside skin and put them in cold water. Cut them in pieces about three or four inches long and put them in boiling water. Boil them from forty to sixty minutes or till tender; then drain and serve them with white sauce,

rich brown gravy, or melted butter. Or when boiled, dip them in stiff batter, or in bran tea boiled to a strong jelly, and fry them; then serve with brown sauce, etc. When boiled, mashed, formed into cakes, and fried in butter, they are said to have the flavour of oyster patties, or of smelts.

To Stew Roots, Tubers, etc.

223. See 61. Prepare them as for boiling.

Boil them, but not till quite tender; let them remain till cold, then remove the skin by peeling or scraping; cut them in dice or in slices, and when cold put them in a stew-pan with a little milk or cream and a little salt; simmer them till tender, then stir in a little butter and flour or oatmeal, etc.; mix the whole well and simmer it a little longer. If preferred sweet, add a little sugar and fruit; if savoury, add white pepper or cayenne, minced parsley, chives, leeks, garlic, onions, etc., shred fine.

224. Or, dissolve in a stew-pan from two to four ounces of butter, add a small dessert-spoonful of flour, shake the pan two or three minutes, and add slowly a small cupful of boiling water,* a little pepper and salt, and a tea-spoonful of minced parsley; put in the sliced tubers, previously boiled, and shake them gently over a clear fire until quite hot, and until the sauce adheres to them well. At the instant of serving add a dessert-spoonful of strained lemon juice. A quarter of a pint or more of thick white sauce may be used instead of the butter, etc., with or without the minced parsley.

225. Or, cut the potatoes or other tubers as for a pie; put them in a pan in layers with a little chopped onion, pepper, and salt upon each layer, and on the top lay an ounce or two of butter, add a little water, cover the pan, and stew the contents gently for about half an hour, or bake them in an oven.

226. Or, if intended for soup, dissolve the butter in a stew-pan, add a tea-spoonful of brown sugar, then the sliced vegetables; cover them closely and stew them very slowly till soft and lightly browned, which may require from twenty-five to sixty minutes.

* Whenever water is added to soups, sauces, etc., it should be very hot or boiling.

Potato Hash.

227. To five pounds of potatoes pared and sliced as for a pie, add one quart of water, a table-spoonful of oatmeal, a little salt and pepper, also two ounces of butter, or three quarters of a pint of milk; boil the whole, shaking the pan frequently; add chopped parsley and sweet leeks, and let the whole stew till tender, stirring it occasionally. Onions and sage chopped and stewed with potatoes, make also a good hash; and pease meal may be substituted for the oatmeal.

Turnip or Mixed Hash.

228. Turnips twelve ounces; potatoes twelve ounces; flour, oatmeal, or pease meal, etc., two table-spoonfuls; butter two ounces; one large onion; a table-spoonful of salt. Boil the turnips cut into small dice, and the onion cut small, in three pints of water, add the salt and boil one hour; then put in the potatoes also cut in pieces, and after boiling three quarters of an hour longer add the butter. Rub the flour in a quarter of a pint of cold water until quite smooth, pour it into the pan and let the whole boil slowly fifteen minutes longer, or until all the ingredients are quite tender and the liquid part of the hash of the consistency of thin butter sauce. It will be sufficiently boiled in two hours, and should be covered the whole time.

Carrots, Jerusalem artichokes, vegetable marrows, etc., may be used instead of the turnips.

To Steam Roots, Tubers, etc.

229. See 62. Prepare them as for boiling; put them in a steamer over boiling water, to which a little salt has been added, and when they are tender proceed as directed for boiled potatoes, etc. The water should boil well before the tubers are put into the steamer, and it should be kept boiling till they are removed. If potatoes be fully grown and pared, they will be ready in twenty-five minutes.

To Bake or Roast Roots, Tubers, etc.

230. See 63 and 64. Prepare them as for boiling, and divide such as are very large; place them in a moderately heated

oven, or in a Dutch oven, or cheese toaster; turn them occasionally, and take care they are not charred or burnt before they are well heated through. A small piece of skin may be cut off potatoes, and the remaining skin rubbed over with butter to make them crisp.

Large potatoes require about two hours; large beet root from four to six hours. When in haste, half boil the tubers and take off the thin skin before roasting them. Potatoes are improved by being roasted in wood-ashes. They may also be pared, put on a tin or dish, with two or three sliced onions, a little butter and water, and then a little flour dredged over them, baked in an oven, and served with brown sauce (516).

To Fry Roots, Tubers, etc.

231. See 66. Wash, pare, and cut them in slices less than a quarter of an inch thick; or into thin shavings or ribbons, by paring round them in a spiral direction; put them into boiling butter or oil, fry them crisp, and when of a light colour, to a fine brown; lift them with a skimmer, drain them on a soft warm cloth, sprinkle a little salt over them, and serve them hot. A little white pepper or cayenne may be added.

232. Or, boil the tubers till nearly tender, drain the water from them, and let them stand till cool; pare and slice them, sprinkle a little salt and pepper over them; dip them in batter or in a strong jelly of bran tea, or in egg, and then sprinkle them with bread crumbs; or dredge them with flour, or pease meal, or add bread crumbs and parsley chopped fine, and fry them as above. They may be served with fried onions and brown sauce, or put between two pieces of bread as a sandwich. Cold potatoes, etc., may be sliced and fried as above.

Cauliflowers are excellent when boiled till tender, then the sprigs are separated and allowed to cool; dipped twice in batter made with a table-spoonful of flour, two table spoonfuls of milk, and one egg well beaten, and fried. Broccoli, etc., in the same way. (261).

To Mash Roots, Tubers, etc.

233. Boil, steam, or bake them till tender; pour off the

water, remove the skin, specks, etc., when necessary; evaporate the moisture from potatoes, etc., and squeeze the water from those which contain any, as turnips and Jerusalem artichokes; press them while hot through a colander or coarse sieve; or bruise them quite smooth with a wooden spoon, or with two forks in one hand, the points of the prongs being turned outwards; if not sufficiently dry, stir them for a few minutes in a saucepan over a gentle fire, then add one or two ounces of butter for every two pounds of mashed roots; also a little salt, a few spoonfuls of milk or cream, or white sauce, and stir the whole during five or six minutes, or until it is hot, well mixed, and all superfluous moisture evaporated. A little sugar added with the salt to turnips, carrots, etc., is considered an improvement by some persons. An egg also may be beaten up with the milk. A little flour mixed with the butter renders turnips less watery when mashed.

Boiled roots three pounds; butter two ounces; salt half a teaspoonful; sugar a dessert-spoonful; milk or cream nearly half a pint.

To Serve Mashed Tubers, etc.

234. Any of the following methods may be adopted:—

1. Serve them hot from the pan, without further preparation.

2. Brown them before the fire.

3. Put them in well-buttered scallop shells or patty-pans, strew bread crumbs and small pieces of butter on the top, and brown both tops and bottoms by turning them.

4. Press the mashed roots into buttered cups or moulds, which have been strewed with fine bread crumbs, and all loose crumbs shaken off; brown before the fire or in an oven.

5. Mix the mashed potatoes with whites of eggs beaten to a froth; form the whole into a paste, with which fill the skins of baked potatoes, from which one end has been cut off, and the contents removed; then bake and serve.

6. Let the mashed roots cool a little, roll them in balls, sprinkle over them rice flour, or vermicelli crushed slightly with the hand; or roll them in egg and fine bread crumbs, fry the balls, or roast them slightly in a Dutch oven.

7. To a pound of the mashed roots add the yolks and whites of four eggs, well whisked; mould them into small lumps, drop them into a small pan of boiling oil or butter; fry them five minutes over a moderate fire, and drain them well.

8. To the mashed roots add minced parsley, a small quantity of green onions or eschalots, or boiled onions passed through a sieve; add also a little cayenne or white pepper, and sufficient yolks of eggs to bind the mixture; roll it into balls, or into three or four-inch lengths, and fry in butter or oil over a moderate fire; or dress it as potatoes scalloped. Potatoes thus dressed and fried are called rissoles (472).

Potato Balls.

235. Boil some potatoes in their skins; when cold, peel and grate them. Beat two ounces of butter to a cream, and add the yolks of two eggs well beaten, a little salt, and as much of the grated potato as will make a stiff paste; add also a little well beaten white of egg. Rub the palm of the hand with a little flour, and roll the paste into small balls, and boil them. These are very good in white soup, or they may be eaten with white sauce.

236. Or, potatoes half boiled, pared, and grated; wheat flour, or pea meal about one-sixteenth the weight of the potatoes, salt, pepper, and sweet herbs. Mix the whole to a proper consistency with boiling water; form the mass into dumplings of the size of a large apple; roll them in flour to prevent the water penetrating them; put them in boiling water and boil them till they rise to the surface, when they will be sufficiently done. They may also be boiled in pudding cloths.

237. Or, mash very smooth some well boiled potatoes with a little cream, or butter and milk, and a little salt; then form them into balls or in the shape of apples, pears, or other fruit; warm them through, and brown them slightly on one side in a Dutch oven.

A Substitute for Potatoes.

238. Steam or boil thoroughly one pound of turnips; mash them well over the fire, and at the same time sprinkle in about two ounces of oatmeal, or pease meal, very slowly; when of a

proper consistency put the mixture into a buttered dish, and brown it before the fire or in an oven. A little pepper and salt, or sugar, should be added according to taste.

Potato Fibre.

239. Potato fibre used as rice makes good puddings, and when dried it may be ground into meal. Wheat meal or oatmeal, etc., may be mixed with the meal from potato fibre, in equal quantities, and used for bread, or made into porridge. See 34.

TO BOIL CABBAGES, SAVOYS, CAULIFLOWERS, HEADED BROCCOLI, ETC.

240. Dress the cabbage (43), and cut it into four parts from the top, but not so as to separate them from the stalk, which should be cut off close to the leaves. Let it lie an hour in cold water, to which a little salt has been added. Put it into boiling hard water (4 and 60) in which some salt has been dissolved, and let it boil an hour or an hour and a half, according to its size, without any cover to the pan, adding more boiling water as required, and skim it occasionally.

Remove it from the water and put it in a colander to drain; then pour cold water over it till it is quite cold; put it in fresh boiling water and let it boil two hours or till the thickest part of the stalk is quite tender; drain it again in the colander, pressing out all the water; lay it in a deep dish, and divide it entirely into quarters. Lay some pieces of butter among the leaves, add a little pepper, cover the dish, and serve the cabbage hot.

Large savoys may be similarly treated.

Cauliflowers and white cauliflower broccoli should be boiled in milk and water, and the scum removed as it rises. A little cold water occasionally added will assist in bringing the scum to the surface.

Brussels Sprouts, Turnip Greens, etc.

241. Dress, wash, and drain them well; peel the stalks of *long* sprouts, and tie them in bunches; boil from five to fifteen

minutes. Turnip greens should be well washed, and boiled in plenty of water, to remove their bitterness. Serve the long sprouts as asparagus. Greens should be well pressed after boiling, to remove the water from them.

Asparagus.

242. Scrape the lower part of the stems, tie them in bunches of equal size, and cut the stalks in each bunch of equal length; boil them from fifteen to twenty-five minutes. Serve them on toast dipped in the water, in which they have been boiled, and with melted butter.

Sea Kale.

243. Tie it in bunches, put it in boiling water, or milk and water, and when it is tender, which will be in about twenty minutes, drain it and serve it with melted butter, or white sauce, or upon toast, as asparagus.

Artichokes.

244. Dress (42), and soak them. Young ones should be boiled from thirty to forty-five minutes, full grown ones an hour and a half or two hours. When the leaves can be drawn out easily, the artichokes are ready. The water should have a little soda in it, and should be skimmed during the boiling. Serve with melted butter.

Peas (les petis Pois).

245. When of different sizes, put the smallest into the water a few minutes after the others; add a little sugar to the water, and boil the peas from fifteen to twenty-five minutes. Drain, and serve them with melted butter, or with a little butter amongst them. A few sprigs of mint are frequently boiled with them.

Beans (les Fèves non mures), and Unripe Haricots, or les Haricots flageolets.

246. Boil them from twenty to thirty minutes. When the skin wrinkles they are generally enough, but it is better to feel or

taste them, to ascertain whether they are sufficiently tender. Serve them with plain melted butter, or parsley and butter. When the beans are old, the external skin may be removed after they have been boiled, and the green part well mashed over a gentle fire, adding butter and a little flour, chopped parsley, pepper, and salt; then put the whole in a hot mould if thought desirable.

French Beans (les Haricots verts).

247. Remove the stalks and strings, and cut the beans diagonally; put them in spring water, wash and drain them, then boil them from ten to twenty minutes.

Spinach.

248. Pick each leaf separately, removing all strong fibres; wash the spinach in several waters and drain it, then boil it from eight to ten minutes. See 256.

Lettuces.

249. Wash them in water without salt. Boil from twenty to thirty minutes.

To Stew Cabbages, Savoys, etc.

250. Remove the outward leaves, take out all the stalks, and cut the cabbages into very thin strips; wash, drain, and put them into boiling water, which has been salted and skimmed. Boil them from ten to fifteen minutes, or till tender; strain and press the water from them thoroughly, and chop them slightly. Put into a clean saucepan two ounces of butter, to which, when dissolved, add the cabbage, and pepper, and salt sufficient to season it. Stir the whole over a clear fire till tolerably dry; shake in lightly a table-spoonful of flour, turn the whole well, and add by degrees a cup of cream or white sauce. An onion cut small may be stewed with the cabbage; or, shred the cabbage, very thin, wash it and put it into a saucepan with a little pepper and salt, two or three ounces of butter, and no more water than adheres to the cabbage after washing. Stew it till tender, and, when nearly

ready, add two or three table-spoonfuls of vinegar.* A few slices of red beet will improve the colour of red cabbage.

Or, shred and wash a red cabbage; peel its weight of apples, slice and core them; put these and the cabbage in a stew-pan with a little butter and a very little water; stew the whole by the side of the fire till tender; season with pepper and salt, some add a few slices of onion.

Or, boil a cabbage, then drain and squeeze all the water from it; add a little butter, pepper, and salt, and press the whole into a mould; bake it an hour, turn it out, and serve. Potatoes cooked and bruised may be mixed with the cabbage before it is put in the mould.

To Stew Peas, Windsor Beans, or French Beans.

251. Boil a quart of peas, or French beans, etc., till tender, then drain the water from them. Dissolve one or two ounces of butter in a stew-pan, and when it boils stir in a dessert-spoonful of flour, shake it over the fire for three or four minutes, but do not permit it to become coloured; then add gradually a cup of cream and a little sugar. When the sauce boils, put in the peas or beans, shake them in it till they are very hot, and serve them quickly. As they are taken from the fire the beaten yolks of two eggs and a little lemon juice may be stirred in, or a table-spoonful of minced parsley and sweet herbs. Instead of these, an onion cut in four and a little mint may be stewed with the peas and afterwards removed.

Another Method.

252. Put a quart of peas in plenty of cold water, with rather more than an ounce of butter; handle the peas with the butter till the whole of it adheres to them; remove them from the water and drain them in a colander, then stew them with a little parsley and green onions. When they have recovered their green colour,

* Some prefer adding a little more water, about half a pint for each cabbage, they then cover the pan closely, and stew the cabbage for three hours. Should it become too dry, and be in danger of burning, add a little more boiling water. When done, press and drain it through a colander.

sprinkle a little flour over them, stirring them and moistening with boiling water till they are covered with the flour, and evaporate the water from them over a brisk fire. When no liquid remains, add a little sugar and salt, the sugar should be previously dipped in water; mix one ounce of butter with a dessert-spoonful of flour, and thicken the peas with this while they are boiling.

Windsor Beans.

253. Half cook them in water with a little salt; put them in a stew-pan with a little butter, a bunch of parsley, scallion onions and a little savoury; set them on the fire, add a little flour and sugar, and dilute them with vegetable broth, or a little clear soup; when sufficiently done, add yolks of eggs moistened with milk, and serve.

French Beans (Haricots verts).

254. Remove the fibres and wash the beans; put them in boiling water with a little salt; when cooked put them in cold water to preserve their colour. Put a little butter in a stew-pan, also a little salt, a little nutmeg, a glass of milk or of the water in which the beans have been cooked, and, having removed them from the cold water and drained them, stew them ten minutes, then serve them with yolks of eggs, to which parsley and a scallion, minced fine, have been added. If no milk is at hand, a little vinegar may be used instead.

The better to preserve their colour, put a double linen cloth on a sieve, and on this cloth a good spoonful of wood ashes. Pass the water, in which the beans are to be cooked, over the ashes and through the sieve. This method may also be adopted in cooking artichokes.

French Beans as a Salad.

255. Cook them in water as above, drain them and let them cool. Season them, some hours before using them, with pepper, salt, and vinegar; then cover them well. At the time of serving, drain off the water which they will have yielded, and add salad sauce.

To Stew Spinach, Water Cresses, etc.

256. Wash the spinach in several waters, and pick it well; boil it a few minutes and then drain and squeeze the water well from it, through a cloth or colander; chop it fine, put it in a stew-pan, and stir it over a moderate fire till dry; add two ounces of butter for a moderate dish of it; stir it ten minutes or until it appears dry again, and, whilst stirring it, dredge in a dessert-spoonful of flour. Two or three spoonfuls of cream may be added, or an egg beaten up with milk, and a little salt or sugar; stir the whole again till the moisture has been evaporated, and serve it hot with sippets, or press in into a hot mould.

If a slightly acid flavour be preferred, add a tea-spoonful of lemon juice after it has been removed from the fire. It is said that when spinach is stewed in butter it is subjected to a heat which renders it crisp and destroys its colour. Some prefer spinach stewed with crumbs of bread, a little butter, salt, and pepper, fried bread sippets to garnish it, or poached eggs on the top. Some add parsley, shallots, etc.

Or, after washing and picking the spinach, put it into a stew-pan with no water except that which adheres to it from washing; add a little salt, and stir it fifteen minutes or till tender; drain off, or evaporate the moisture; chop the spinach on a hot trencher and serve with poached eggs.

To Stew Lettuces, Nettles, etc.

257. Wash them well, drain them, and put them in boiling water with a little salt; boil them from twenty to thirty minutes, press the water from them, and then chop them a little; heat them in a saucepan with a little butter, pepper, and salt, dredging in also a little flour as you stir it; add a little cream, and stew quickly till it is tolerably dry. Stir in a little vinegar or lemon juice, and serve hot with sippets.

To Stew Celery.

258. Boil three heads of celery in milk and water till tender, but not soft, divide them lengthwise; cut them into pieces about two inches long; put them in a pan with half a pint of milk or

cream; thicken with a little flour, and add a small piece of butter, or the yolks of four eggs; some add an onion chopped fine. Stir the whole well together, but do not let it boil; when it begins to thicken it is ready to be served.

To Stew Onions.

259. Remove the exterior skin and trim the ends; if the onions are large and strong, boil them ten or fifteen minutes, and change the water before stewing them. Put them in a stew-pan, or on a dish in an oven, with a little butter. When the onions have become brown, pour melted butter over them with a little pepper and salt, and stew them fifteen minutes longer.

260. Or, slice, dredge, and fry the onions a fine brown; then put them into a stew-pan, with very little water, pepper, and salt; cover them up and stew them two hours. A little flour and butter may be added if requisite.

Onions are also very good roasted, butter, pepper, salt, etc., being added.

To Fry Cauliflowers, Celery, etc.

261. Boil them till tender in water with a little salt in it; separate the sprigs of cauliflowers, and cut the celery in three or four inch-lengths; drain them, and let them lie on a dish to cool. Make a batter with one well beaten egg stirred into the third of a pint of milk, add a few table-spoonfuls of bread crumbs or flour; beat the batter well after it has been mixed; dip the pieces of cauliflower or celery twice into the batter, then fry them a light brown. When done, lay them to drain on an inverted sieve, with a pan beneath it, and serve.

To Dress Laver.

262. Put it in a saucepan and make it quite hot; then add a little butter, half a lemon, and a little pepper and salt. Stir the whole until the butter is dissolved, and serve it quite hot.

MUSHROOMS.

263. Cut off the stems, and if the mushrooms are young and tender clean them with a bit of new flannel and some fine salt, and dry them with a soft cloth; or rince them in fresh water and drain them quickly; spread them on a clean cloth, fold it over them, and leave them ten minutes or more to dry. If the mushrooms are old, or the skins firm, they should be peeled.

(*a.*) For every pint of mushrooms thus prepared, put an ounce and a half of butter into a thick iron saucepan; shake it over the fire till the butter just begins to brown, put in the mushrooms, and continue to shake the saucepan over a clear fire, whilst they simmer three or four minutes; strew in a little salt, cayenne, and powdered mace; then stew the mushrooms till quite tender, and serve them with their own sauce only. They are very good when drained from the butter and served cold, and may be kept for several days in a cool larder. The butter in which they have been stewed is excellent for flavouring gravies.

After stewing them as above, with a little more spice, drain them from the butter, and when cold pack them closely in a pot. Pour lukewarm clarified butter thickly over them, and store them in a cool place. Mushrooms should be very tender, or carefully masticated, otherwise they will pass the stomach undigested, and may cause much inconvenience (44).

(*b.*) Prepare them as above, then put them with the hollow side upwards in a tin; place a small piece of butter on each, season with pepper and salt, and place them in an oven where they should remain till rather brown; remove the mushrooms and pour a little water (in which the stalks and peel have been boiled) into the tin, and when boiling add it to the mushrooms.

(*c.*) Toast some bread half an inch thick; take some Devonshire cream, or butter; or milk reduced to the thickness of cream by boiling with a little pepper, salt, and one clove; whilst warm put in an ounce of butter mixed with a little flour, stir the whole round; then put the mushrooms and this sauce upon the toast, cover the whole with a basin, and bake half an hour in a baking pan or on a dish; let the mushrooms remain covered by the basin for a few minutes after they have been removed from the oven.

(*d*) "Flaps" or large mushrooms, may be cooked thus: Wipe them dry, cut out the stalk, and steep them for an hour in a mixture of oil, salt, pepper, and a little chopped garlic. Put them on a gridiron, the stalk side downwards; then turn them, and wet the gills with white sauce (522, *b*.), or similar sauce. When cooked, remove them very gently, so as not to let the juice run out, and serve them with a little of the mixture in which they were steeped, and a little lemon juice.

SALADS.

264. Salads are chiefly composed of lettuce, endive, mustard, cress, sorrel, parsley, green onions, potatoes, cucumbers, lentils, haricots, French beans, cauliflower, tops of young spinach, mint celery, radishes, boiled beet, water cresses, etc. All vegetables intended for salad should be fresh gathered, well trimmed, repeatedly washed in cold water, with a little salt in it, and thoroughly drained.

The small herbs should be put in a clean cloth and lightly shaken, but not pressed. The lettuces and celery should be divided and neatly arranged, with the smaller salads in the salad bowl. When salad sauce or dressing is used it should be put in the bowl first, the salad should be laid lightly over it, and the top garnished with boiled white of eggs cut in rings, and slices of cooked beet root. The sauce, however, is usually served in a separate vessel.

Winter Salad.

265. Potatoes, onions, and red beet, should be boiled till tender, and, when cold, cut in slices, and eaten with vinegar and oil, or any other salad sauce (505, 506). A little pepper, salt, or other seasoning may be added.

Cold haricot beans, French beans, etc., may also be thus prepared.

Other Salads.

Celery, young onions, and radishes.

Cucumber and onion cut in slices.

Green French beans boiled, and, when cold, put into a bowl, with some tarragon, chervil, and chopped chives.

ANIMAL PRODUCTS.

266. To the observations respecting milk, cream, curd, butter, and whey, at 45, etc., it may here be added, that the latter has recently been much recommended in the treatment of certain diseases. The large amount of water entering into the constitution of whey, renders it a diluent which promotes the secretions, and as the secretions cannot be increased without augmenting the quantity of solids removed from the system, it may be regarded as an agent which accelerates the metamorphosis of the tissues; it also contains a considerable portion of sugar. Whenever it is desirable to diminish the amount of nitrogen in the diet, and consequently the nitrogenous constituents of the blood, without altering the quality and quantity of the inorganic compounds necessary for the healthy nutritive processes, whey will be found an efficient agent.

It is, therefore, recommended in those forms of scrofula and incipient pulmonary consumption, which are characterised by a deficient supply of the phosphates of iron. It is also considered useful when there is swelling of the glands in infancy, and in various cutaneous eruptions, in emaciation, and defective development of the bones; likewise in acid dyspepsia, rheumatic affections, the gouty diathesis, and dropsy.

From twenty-four to thirty-six ounces of whey may be taken daily by a patient; a tea-cupful being taken occasionally.*

CHEESE.

Pounded Cheese.

267. Cheese eight ounces; butter one to two ounces; or a table-spoonful of salad oil. Pound and rub the cheese and butter in a mortar, till quite smooth; it may then be spread on bread, or

* See *The Domestic Management of the Sick Room*, by Dr. A. THOMPSON; *The Rationale of Whey-cures*, by Dr. BENEKE; *British and Foreign Medico-Chirurgical Review*, July, 1853.

between two pieces of bread as sandwiches; some add mustard and cayenne. When not used immediately, it may be pressed well down in a jar, and covered with clarified butter.

Stewed Cheese.

268. 1. Dissolve slices of cheese with a little butter, pepper, etc., over steam or otherwise. Serve on soft toast.

2. Cut the cheese into slices of a moderate thickness, and put them into a tinned saucepan, with a little butter and cream. Simmer the whole very gently till the cheese is well dissolved; remove it from the fire, and allow it to cool; then for every four ounces of cheese add two or more yolks of eggs well beaten; trim the whole into any required form, and brown it before the fire, or with a salamander.

Cheese thus prepared may be rendered either sweet or savoury, and eaten either hot or cold.

3. Grated cheese four ounces; new milk one quarter of a pint; butter half an ounce or more, as the cheese may require; stew the whole till quite smooth; when cold mix it with a well beaten egg; put it on a dish and brown it as above.

4. Stew four middle sized onions in a pint of water till quite soft; then add four ounces of sliced or grated cheese, and two or three ounces of butter; stir the whole over the fire for one minute, after the cheese has been added.

Toasted Cheese.

269. 1. Toast a slice of bread on both sides, and butter it; toast a slice of cheese on one side, and lay that side next the bread, then toast the other side with a salamander.

2. Cut some onions in two, and boil about four ounces of them, changing the water once; chop them and put them in the oven with a little pepper, salt, and butter, and stew them till tender. Spread them upon a dish, and cover them with eight ounces of cheese, in thin slices; toast the whole rather quickly, and serve it hot. Add a little butter, cream, etc., when the cheese requires it.

3. Half cook the onions, then chop them and mix them with thin slices of cheese in alternate layers, and toast the whole before the fire. A little butter, milk, etc., may be added as above.

4. Roll out some good light paste about one-eighth of an inch thick; cut it in pieces two or three inches broad, and four or five long; between two of these lay slices of good toasting cheese; close the paste at the sides and ends, and bake in a quick oven. They may be served either hot or cold. These have been called "cheese-turnovers."

5. Boil two ounces of macaroni, or rice, in a pint of milk till tender; drain the milk from it, and put the macaroni or rice in a well buttered dish, over three ounces of grated cheese; lay some pieces of butter upon it; cover it with grated cheese and toast the whole. A layer of bread crumbs may be put over the macaroni before the cheese. A little cream may also be added. See 108.

6. Macaroni four ounces; milk one pint; ground rice a large table-spoonful; cheese grated or in thin slices four ounces; butter half an ounce; cayenne, grated nutmeg, and salt, a little of each.

Boil the macaroni in the milk till tender, then add the rice previously mixed with a little cold milk or water; stir it well, then add the cheese, butter, pepper, etc. When the whole has been well mixed, and the milk has been absorbed; put it in a buttered dish; strew bread crumbs and a few small pieces of butter over it, and brown it with a salamander or in an oven. It should be constantly stirred during the boiling.

Cheese, Grated Bread, etc.

270. (*a.*) Cheese grated four ounces; crumb of bread two to four ounces; butter one to four ounces; yolks of eggs one to four; cream or milk one cupful. Pour the boiling milk upon the bread crumbs, and, when nearly cold, add the cheese and butter; beat the whole well, and boil it gently till smooth; let it stand till rather cool, then stir in the eggs previously beaten.

(*b.*) Grated cheese four ounces; butter four ounces; yolks of eggs four; inside of a small French roll boiled in cream till soft. Beat all these to a paste in a mortar; mix the paste with the whites of four eggs previously beaten.

(*c.*) Cheese eight ounces; butter two ounces. Put them in a stew-pan, and stir them over a stove or gentle fire till quite melted. Remove the mixture from the fire, and stir in till thoroughly mixed six yolks of eggs, and a little cream.

1. Put the mixture in a dish, or in small oblong paper cases, or upon toasted bread, and brown it before the fire. Eat it while hot.

2. Bake the mixture for about ten or fifteen minutes, in a moderate oven in a dish, or in tart pans, previously buttered, either with or without a lining of paste. When the beaten whites of eggs are added, the mixture should be put in the oven, immediately after the addition, and as soon as cooked, serve quickly.

3. Make the mixture into small oval balls, dip them in stiff batter, and fry them.

To the above ingredients may be added mustard, pepper, salt, chopped parsley, young onions, etc.

Rice, potatoes, apples, lettuce, celery, and other vegetables, along with butter, cream, or milk, seem a more appropriate addition to cheese than bread and eggs. Cheese consists chiefly of caseine or curd, and requires such carbonaceous matters as butter, rice, potatoes, etc., to render it a proper article of diet. Baked or toasted cheese and potatoes are highly nutritious and wholesome; butter, cream, etc., may be supplied when thought desirable.

4. Flour four ounces; grated cheese four ounces; butter four ounces; cayenne half a tea-spoonful; dissolved in a tea-cupful of hot milk. Mix all well together with the hand, roll the mixture out and cut it to the size and shape of finger biscuits; bake them in a quick oven, taking care not to scorch them.

Cheese pudding (372).

Eggs.

To Boil Eggs.

271. Put them gently in boiling water, and boil them two and a half or three minutes. Or, when the water boils, remove the pan from the fire, put in the eggs, and let them remain in the water six minutes; the yolks and whites will thus be more intimately mixed.

Or, put them in cold water, set the pan on the fire, and when the water has boiled one minute or rather more, the eggs will be ready.

If preferred rather hard, boil them a little longer; if very hard, ten minutes.

When boiled hard, remove the shells and chop the eggs with boiled parsley, mix with them a little good melted butter, and a little salt. Serve them with sippets. Fresh eggs plunged suddenly into a large quantity of boiling water are liable to have their shells broken by the expansion of the internal fluid; this will not be the case when they are put into a small portion of boiling water, because the temperature of the water will then be reduced by contact with the eggs, and will be raised again slowly enough to permit the escape of a small portion of the fluid. Eggs which have been laid some time contain a little air, and are not so easily broken by the hot water, because the air admits of expansion (53).

To Poach Eggs.

272. Break the shells in the middle, and turn each egg into a cup, from which slide it gently into a pan of boiling water, which has been removed from the fire; when the whites begin to set, boil the water gently, and immediately that the yolks set, remove the eggs with a slice.

To prevent the yolks being covered with white, the pan should contain no more water than is just sufficient to float the eggs. By trimming the whites, and attending to these directions, an elegant preparation is obtained, the yellow yolk being surrounded by a circle of pure white.

To Bake Eggs.

273. (*a.*) Lightly butter a dish, upon which break several eggs without breaking the yolks; add a little pepper, salt, and a few small pieces of butter here and there; set the dish in the oven or before the fire, till the whites are set, but not hard; serve them while hot.

Bread crumbs previously browned may be sifted over them, and parsley used as a garnish.

(*b.*) Or, beat the eggs, and for each egg add two table-spoonfuls of new milk; add also a little chopped parsley, pepper, and salt.

Dissolve the butter in the dish, pour in the eggs, and bake immediately in a quick oven. If baked in a flat dish, a few minutes will be sufficient; if in a deep dish, the eggs will require a little longer time.

To Fry Eggs.

274. 1. Break each egg separately into a cup, from which pass it into a pan of melted butter, and fry them over a rather brisk fire. When they begin to set, throw the hot butter repeatedly over the yolks with the slice till they are enough. If preferred crisp and rather hard, they may be turned over.

2. Beat the eggs, season them with a little pepper, etc., and fry them. When cold, put them between slices of bread and butter.

3. Boil the eggs hard, slice them and fry them in olive oil or butter; brown a little butter in the pan with a little flour sprinkled into it, add a little water and salt, and when the whole boils pour it over the eggs. Garnish with fried parsley, or serve with parsley sauce.

4. Boil the eggs three minutes; put them in cold water, remove the shells and surround the eggs with puff paste; brush them over with beaten eggs, sprinkle a very few bread crumbs over them; then fry them a light brown in clarified butter, and serve them with a little brown sauce.

For observations respecting fried articles, see 66.

Mulled Eggs.

274*. Beat the yolk of a recently laid egg; stir to it a little milk or cream; then pour to it more hot milk or hot coffee, tea, water, ale, or wine, stirring it well all the time. If the hot liquid be added too hastily, or without being well stirred, the egg will coagulate or curdle instead of uniting with the fluid. Sugar and flavouring may be added according to taste (205).

MISCELLANEOUS COMBINATIONS.

275. The instructions hitherto given apply chiefly to the cooking of single articles of diet, or simple preparations; but as fruits, grain, roots, and other vegetable and animal productions vary much in their chemical composition, nutritive qualities, and suitableness to the palate, an immense variety in these respects may be obtained by judiciously combining two or more articles which differ in character and composition. A few only of the combinations which may be made are here given, by way of example, and directions for further experiments, whereby preparations which can be rendered elegant in appearance, agreeable in flavour, and highly nutritious, may be multiplied almost without limit. Repeated trials must determine those which are most gratifying to individual palates, but in general, it will be advisable to combine those which contain an excess of nitrogenous principles with such as are of a more farinaceous and oleaginous character. The senses of smell and taste will generally be a sufficient guide; thus, the leguminous seeds, as peas, beans, and lentils, which contain much nitrogen, and are strong in flavour, should be united with products abounding in starch, and possessing little flavour, as rice, potatoes, etc.; butter also should be added to supply the natural deficiency of these articles in oleaginous matter.

276. The following table is sufficiently near the truth for culinary purposes, and a little attention to it will enable any one to make successful experiments in new preparations, which should be adapted, as nearly as can be ascertained, to the constitutions and employments of those for whom they are intended. Muscular labour may require a liberal supply of nitrogenous articles; for sedentary employments, farinaceous products and fruits should be preferred; whilst consumptive patients will require a combination of these with saccharine, acidulous, and oleaginous productions. For further observations on these points, see 5, 16, and 49 to 53.

277. CHEMICAL CONSTITUENTS OF VEGETARIAN FOOD.

SUBSTANCES 100 PARTS.	NITROGENOUS	CARBONIFEROUS.	SALTS.	TOTAL NUTRIMENT.	WATER.	FAT.
Cheese (skimmed)	45	14	5	59	44	6.
,, (Cheddar).	29	72	4.5	101	36	30.
Lentils	29	48	2.3	77	14	1.5
Beans	24	47	3.6	71	14	1.4
Haricots	23	52	3.6	75	19	3.0
Peas	22	63	3.0	85	13	2.0
White of Egg	20	17	1.6	37	78	7.0
Yolk of Egg	16	72	1.3	88	52	30 0
Oatmeal	12	76	3.0	88	15	6.0
Wheat Flour	11	75	1.7	86	15	2.0
Barley Meal	10	76	2.0	86	15	2.4
Rye Meal	9	71	1.8	80	15	2.0
Indian Meal	9	84	1.7	93	14	8.0
Wheat Bread	9	51	2.3	60	44	1.0
Rice	7	77	0.3	84	14	0.8
Rye Bread	5	48	1.4	53	48	1.0
Cow's Milk	5	15	0.7	20	86	4.1
Skimmed Milk	5	12	0.7	17	87	2.7
Butter Milk	5	6	0.7	11	87	0 5
Potatoes	2	24	0.7	26	74	0.2
Carrots and Jerusalem Artichokes	2	11	0.7	13	86	0 5
Parsneps, Beet, and Cabbage	2	6	0.7	9	91	0.5
Turnips	1	5	0.7	7	93	0.2
Butter	—	199	—	199	15	83.0
Almonds, Nuts	24	130	—	154	3.5	50.0
Sago, Arrowroot, etc.	—	84	—	84	18	—
Chocolate	—	62	—	—	—	26.0
Apricots, Gooseberries	—	5	—	—	—	2.0
Beef and Mutton	19	12	2.0	31	73	5.0

278. The preceding table is extracted chiefly from one drawn up by Dr. LETHEBY, in the *Journal of the Society of Arts*, 20th March, 1857. The articles are arranged, for the convenience of reference, according to the proportion of nitrogenous principles contained in them. Separate columns for starch, sugar, and fat were considered unnecessary; the third column shows the per centage of the carboniferous principles (starch, sugar, and fat included), *calculated as starch*; ten of fat being equal to twenty-

four of starch. The proportion of fat in each article is given in the last column.

As nitrogenous principles contain about 15·75 per cent. of nitrogen, the amount of this chemical element may be found by dividing the numbers in the first column by $6\frac{1}{2}$, or more correctly by 6·35. Thus, oatmeal contains twelve parts of nitrogenous matter, and 12 divided by $6\frac{1}{2}$, is equal to two per cent. nearly of nitrogen.

To obtain the amount of starch, sugar, etc., distinct from the oleaginous matters, multiply the number representing the oil in the last column by $2\frac{2}{5}$, and subtract the product from the corresponding number in the second column, the remainder will be the per centage of the starch, etc.

Thus, in the case of oatmeal, 6 per cent. of oil multiplied by $2\frac{2}{5}$ is equal to a little more than 14, which, subtracted from 76, in column two, leaves 62, the per centage of starch, sugar, etc.

Milk, probably, contains the relative proportions of the nitrogenous and carbonaceous principles best adapted to the human constitution generally, namely, one of the former to five of the latter; it will be well, therefore, to keep this proportion in view when preparing culinary compounds. Good cheese, for instance, contains only two and a-half of the carboniferous principles to one of the nitrogenous; this indicates the propriety of adding to it rice, potatoes, butter, etc. Peas and beans likewise contain only three of the former to one of the latter, and therefore require to be mixed with rice, sago, potatoes, butter, etc.

For the same reason almonds and nuts should be eaten with raisins or other fruit; or in combination with rice-flour, potatoes, Jerusalem artichokes, etc., as in puddings and soups.

Almonds and nuts should be either well masticated or cooked with fruit, farina, etc. The dark skin is injurious and should be removed; almonds should be blanched. For some purposes it is advisable to pound them, or reduce them to an emulsion (56, 57, 134). To a neglect of these precautions may perhaps be attributed the indigestibility of these vegetable productions in certain cases, rather than to their chemical composition. However, the large quantity of albuminous and oleaginous principles which they contain indicates the propriety of using them together with articles

of a different character. Almonds and nuts may by these means be rendered not only harmless but exceedingly useful.

(1.) Fruits and Farinaceous Articles.

279. Many very wholesome and nutritious combinations from these two important divisions of Vegetarian diet will be found under Farinacea in Moulds, (209); Puddings, Pies, and Fritters.

(2.) Fruits, Cream, Eggs, etc.

See custards, 380; creams, etc., 398.

(3.) Farinacea, Roots, etc.

Peas, beans, or lentils, with rice, etc, 110, 324.

Peas, beans, or lentils with potatoes, etc., 236, 238.

Wheat, barley, oatmeal, or hominy with rice, 106.

Wheat, barley, oatmeal, or hominy with potatoes, etc., 236.

Wheat meal, flour, etc., bread, 120, etc.

Bread crumbs, flour, etc.

Rice and onions, 106.

Ground rice creed, and mashed potatoes, mixed in equal quantities and browned before the fire.

Parsneps and bread, etc., 365.

Potatoes, carrots, etc., 361, etc.

Potatoes and parsneps beaten up with a little butter.

Beet root, leeks, and parsley, equal quantities of each stewed with butter, may be eaten with potatoes, bread, or boiled rice.

Potatoes, Onions, etc.

Boil and mash the potatoes; boil the onions and pass them through a sieve; mix the whole well in a stew-pan, adding a little butter, and serve while hot.

Potatoes, Cabbage, etc.

280. Cabbage, greens, spinach, etc., boiled and chopped fine, may be mixed with twice their weight of mashed potatoes; then add a little butter, pepper, and salt, and press the whole into a

well buttered basin or mould; set it in a hot oven five or six minutes, then remove the mould and serve.

A boiled onion may be added, and instead of potatoes half the quantity of boiled carrots, turnips, beet root, or Jerusalem artichokes, may be used. Cabbage, Brussels sprouts, and other greens should have the water well pressed from them before they are added.

Carrots, Turnips, Cauliflowers, etc.

281. Carrots, turnips, cauliflowers, sea-kale, kidney beans, etc., after being boiled, may be cut in lengths of two or three inches and arranged edge ways round a plain mould, either in layers or after any tasteful manner, the middle and other vacancies being filled up with prepared spinach, mashed potatoes, asparagus, mushrooms, etc. Cover the mould and put it in the oven till the contents are quite hot; turn the mould down to drain off the water; then remove the mould and serve the vegetables on a dish with a good sauce. Hard boiled eggs chopped and mixed with a little cream and butter may supply the place of some of the vegetables. Add such seasoning as may be preferred.

Cauliflower and Cheese.

282. Boil a cauliflower till tender, drain the water well from it, and divide it; lay it in a dish and pour a quarter of a pint of good white sauce over it; then grate or slice some cheese over it, and brown it before the fire or with a salamander. Instead of cheese, a few small mushrooms, or very small onions previously boiled, may be put into a saucepan with the cauliflower and white sauce. Serve with toasted sippets.

(4.) Farinaceous and Animal Products.

Rice, cream, milk, etc., 106, 111.
Rice and cheese, 269.
Macaroni and cheese, 107, 269.
Bread crumbs, cheese, etc., 270.
Macaroni, milk and eggs, 108.
Flour, butter, eggs, etc., 133, etc.
Cauliflower and cheese, 282.
Cheese-cakes, 434.

Omelets, 443.
Cheese Fritters, 469.
Rissoles, 472.
Pancakes, 473.
Cheese pudding, 372.
Potted meat, 331.
Cheese turnovers, 269.

(5.) Animal Products.

Custards, etc. 390.
Cheese pudding, 372, 373.
Eggs, milk, butter, etc., 273.
Mulled eggs, 274.
Yolk of egg, olive oil, etc., 553.

PUDDINGS.

283. Puddings are preparations of a soft consistency, and are made in great variety by combining fruit, grain, flour, roots, eggs, milk, and other vegetable and animal products. They are cooked by boiling, steaming,* or baking, and may be arranged under the following divisions, according to the articles prevalent in their composition:

1. Fruit Puddings; 2. Seed or Grain Puddings; 3. Bread, Cake, Muffin, and Biscuit Puddings; 4. Flour or Batter Puddings; 5. Custards, Custard Puddings, and Creams; 6. Puddings made of Tubers and other vegetables; 7. Puddings consisting of Cheese and other animal products.

(1.) Fruit Puddings.

284. The fruits usually put in puddings and pies, are rhubarb, gooseberries, currants, raspberries, cherries, apples, pears, apricots, plums, prunes, raisins, cranberries, figs, etc. Two or more kinds may be mixed, as apples and cranberries, raspberries and currants, rhubarb and gooseberries, etc.

* Steaming is generally to be preferred to boiling.

To Prepare Fruit for Puddings and Pies.

285. *Rhubarb*, sometimes called *spring fruit*, if clean and tender, need not be peeled, but only cut into pieces about one inch long; if coarse and stringy, remove the peel.

Apples should be pared,* cored, and used either whole, cut in halves, quarters, or smaller portions; or chopped fine, grated, or reduced to a compote, as may be preferred. When used whole or in halves, fill up the space left by coring, with butter, sugar, marmalade, raspberry jam, etc.; join the halves, enclose the whole in creed grain or in paste, put the pudding in a cloth, or, if surrounded with paste, in a knitted or netted cloth, and boil it from forty-five to sixty minutes.

When apples begin to lose their flavour, add a little lemon peel, marmalade, etc.

Pears should be peeled and cut in slices and used either alone or mixed with apples. Hard pears are best for puddings and pies.

Prunes should be scalded and stoned, and the kernels simmered with the fruit in syrup or cranberry juice over a slow fire for about ten minutes; a little raspberry vinegar or currant juice may be added to them.

Cranberries are sometimes stewed for about twenty minutes with a little sugar or fine treacle and a few spoonfuls of water; about three ounces of sugar to a pint of fruit. Let them cool previously to using them. Rhubarb, apples, and gooseberries may be prepared in the same way, Cranberries may be used with apples, or with any very sweet jam.

Black Currants may be used for either puddings or pies, if not quite ripe; stew them with a little water and sugar during a quarter of an hour.

Figs should be sliced, covered with milk and stewed with a little butter and sugar. Apples which are rather acid may be mixed with them.

286. Fruit puddings are formed by combining fruit with farinaceous substances after the following methods.

* An easy way of removing the rind from apples or pears is to put them into boiling water for a few minutes; the rind may then easily be separated by a knife.

(*a.*) Fruit covered or surrounded with creed grain, paste, bread, batter, etc.

(*b.*) Alternate layers of fruit, creed grain, paste, bread, or batter, etc.

(*c.*) Fruit, creed grain, bread crumbs, etc., intimately mixed.

As a general rule all fruit puddings which are intended for substantial support, or as a diet rather than an accompaniment to other food, should consist of about equal weights of fruit and farinacea, whether they are made of fruit and grain, fruit and paste, or fruit and bread. The weight of sugar should be proportionate to the quantity and condition of the fruit, or the taste of those for whom the puddings are provided. The quantity of eggs, cream, butter, and flavouring should depend upon such circumstances as health, occupation, the digestive powers, and individual partialities, but it is desirable to guard against compounds which are either too rich, too concentrated, or which contain too great a variety of articles; for plain food, when relished, is the most wholesome; and a natural appetite will require few condiments to excite it.

Tastes are so different that some of the puddings made after the following receipts may be relished by one person and perhaps disliked by another; it is desirable, therefore, to vary the number and quantity of the ingredients till the most approved compound has been ascertained, regard being had to the general instructions here given. It is usual in works on Cookery to give a distinct appellation to each pudding, as Prince Albert's pudding, Montmorency pudding, etc.; they are here generally distinguished by numbers and letters only.

Fruit and Grain Puddings.

287. Put some fruit and a sufficient quantity of sugar in a tart-pan or pie-dish, cover it with creed rice (106), to which a little sugar and butter have been added; also cinnamon or other condiments or flavouring when preferred (56). Bake the pudding ten minutes or longer according to its size. Apples, rhubarb, gooseberries, and other firm fruit should be previously stewed.

288. Line a basin or mould with creed rice, put in the fruit, then cover it with more rice and bake as above.

289. Having stewed some rice till rather soft, add to it butter and sugar, in the proportion of one ounce of each to four ounces of rice previously to being cooked; simmer the whole till dry and tender, and before removing it from the fire, mix in a little sugar upon which fresh lemon-rind has been rubbed, or any other approved flavouring. Press the rice while it is hot into a well buttered mould, make the surface smooth, and let it stand till cold. Turn out the rice upon a tin or dish, and upon the top of it mark out a circle an inch or more in diameter; brush clarified butter over the whole, and place it in a well-heated oven. When it has received a light brown colour, carefully raise the cover previously marked; remove the principal part of the rice from the interior, or until it is about one inch thick in all directions; then fill with preserved fruit warmed in its own syrup; or with compotes of plums or other fruit; or with stewed apples, etc., to which the requisite quantity of sugar and flavouring has been added.

Instead of rice any other creed grain may be employed, or a combination of two or more of them. Unless the rice be cooked slowly, and till very dry, it will not answer the above purpose.

290. Apples or other fruit eight ounces; Scotch barley stewed two hours, eight ounces; sago two ounces half cooked; sugar six ounces. Bake.

291. Apples six ounces; pearl barley four ounces; whites of eggs three; sugar two to three ounces; salt half a tea-spoonful. Bake one hour in a pie-dish in a hot oven.

292. Pare and core some apples and fill the cavities with raspberry or strawberry jam, or marmalade; border a dish with paste, put in the apples, leaving a little space between them, and fill it up with creed rice; sift sugar over and bake one hour at a tolerable heat.

293. Wash four ounces of rice, tie it rather loosely in a cloth with eight ounces of stoned raisins; boil two hours and serve with sweet sauce. It may also be boiled in a mould.

Fruit and Paste Puddings.

294. Pare and core some good baking apples, without dividing them, fill up the space made by coring, with sugar and lemon-

peel, cover each apple with a thin paste, 186, 187, and boil it in a cloth, or cup, or bake it thirty or forty minutes. Serve with butter and sugar, or pour custard over each.

295. Butter a basin, or dredge it with flour, line it evenly with a good paste about a quarter of an inch thick, then put in the fruit with sugar and a little water; cut off the paste close to the edge of the basin, cover the top with paste extending a little over the mouth of the basin, and press it well round and over the rim, to keep in the syrup. Have ready a well scalded cloth, lay it over the top of the basin, and tie it closely round the bottom, then put the pudding in boiling water, or in a steamer for an hour or an hour and a half.

296. Roll out the paste a quarter of an inch thick, lay the fruit, sugar, etc., upon it; draw the extremities of the paste over the fruit to a centre, closing it well together. Boil the pudding in a knitted or closely netted cloth. If a pudding cloth be used, dip it in hot water, wring it and shake it well, butter it, or dredge it with flour, tie it closely round the pudding and boil or steam the pudding as above.

Ripe cherries, currants, raspberries, plums, etc., will not require so long boiling, nor so much sugar, as apples, rhubarb, etc.

Some apples may require to be previously stewed with a very little water, till about half done, and evenly softened by occasional turning; drain the water from them, put them in a basin to cool, and stir in a little sugar; then proceed as above.

When the pudding has been sufficiently cooked, turn it gently out of the cloth upon a dish. It may be eaten with melted butter and sugar, or other sweet sauce.

Some recommend that, after the pudding has been put upon the dish, an opening should be made at the top of the paste to prevent it becoming sad, and then stir in a little butter, sugar, and condiments, or flavouring when desired; but SOYER says that making an opening to put in the sugar spoils the flavour, and makes the pudding heavy.

This kind of pudding is frequently termed "dumpling," and when it is well prepared with light pastry (186, 187), it is a judicious combination of fruit and farinacea, and is wholesome, nutritious, and economical. Dr. JOHNSON said he knew a clergyman

of small income, who brought up a family very reputably, which he chiefly fed on apple-dumplings. Pudding cloths should be laid in hot water as soon as removed, well washed, and quickly dried in the open air, then folded, and kept clean.

297. Stewed fruit, jams, marmalade, currants, chopped raisins, or treacle, etc., way be spread upon a light paste, then rolled up and boiled in a cloth. Roll out the paste thin and cut it eight or ten inches broad, and as long as convenient. Spread upon it a thick layer of fruit, leaving an inch at each end free from fruit; roll it up and twist the ends; wrap it in a floured cloth, or put it in a net, and boil it an hour, or an hour and a half, according to size.

These are sometimes called "Roly Poly Puddings."

298. Line a buttered basin with paste, put in a layer of fruit and sugar, then one of paste; repeat the alternate layers of fruit and paste till the basin is full; cover the top with paste, then boil or steam the pudding, and when ready, turn it out of the basin upon a dish.

Fruit and Bread Puddings.

299. Cut twelve ounces of bread into slices, a quarter of an inch thick; toast them and then soak them in boiling water or milk ten minutes, place some of the slices at the bottom of a dish; fill the dish with rhubarb, apples, or other fruit properly prepared, and add the requisite quantity of sugar; place the other slices of bread at the top, then bake at a moderate heat.

300. Butter a mould or dish, and strew it thickly with bruised sugar; lay round the inside of the mould long slices of bread, the slices overlapping each other; put in apples pared, cored, and sliced very thin; add also sugar, grated lemon peel, and orange marmalade; cover the fruit with slices of bread, and bake at a tolerably good heat.

301. Line a basin with bread and butter, then add a layer of fruit and sugar; another layer of bread and butter, fruit, etc., till the basin is full; pour a little water or milk over the whole, cover with a cloth, and boil an hour. Bread crumbs may be used instead of bread and butter.

302. Butter a dish, put in ten ounces of cut apples or other

fruit, with an ounce and a half of sugar, and two table-spoonfuls of water if required, and cover the fruit with six ounces of bread crumbs; upon these put another layer of fruit, sugar, and water, and cover smoothly with six ounces more of bread crumbs; sift sugar over and bake about forty-five minutes at a moderate heat. It is advisable to cover the pudding with a plate or dish till about half cooked, to prevent the top from becoming too hard and dry.

Creed grain, or biscuit, or tea-cake in crumbs, or mashed potatoes, macaroni, sago, etc., may be used instead of the bread crumbs.

303. Crumb of a light stale loaf, grated small, six ounces; pounded sugar seven ounces; salt a quarter of a tea-spoonful; good baking apples pared, quartered and cored twenty ounces; juice and grated rind of a lemon.

Mix the bread-crumbs, salt, and three ounces of the sugar well together; arrange the apples in close layers in a deep pie-dish which will hold about a pint and a half; strew amongst them the remaining four ounces of sugar, lemon rind and juice; sprinkle the bread crumbs lightly and evenly over the fruit, pressing them gently down upon it; sift powdered sugar over, wipe the edge of the dish, and bake the pudding in a rather quick oven about forty-five minutes or longer.

Crumbs of bread may also be strewed between the layers of fruit.

304. Good sized apples six, or about a pound and a half; butter three ounces; sugar four ounces; eggs two; bread crumbs or biscuit grated, six ounces.

Boil the apples as for sauce, stir in the butter and sugar, and when rather cool add the eggs well beaten. Butter a pudding-dish *cold*; strew a layer of bread-crumbs to the thickness of an inch at the bottom of the dish, and as many as will adhere to the sides; pour in the mixture, strew crumbs over and bake. When baked, turn the pudding out and sift sugar over it.

If the juice and grated rind of a lemon be added, a little more sugar will be required. The *yolks* of two more eggs may likewise be added.

Other fruits may be substituted for the apples. Instead of

strewing the six ounces of bread crumbs in the dish, stir *two ounces* only to the fruit, sugar, etc. ; butter a dish and line it with paste, leaving a small hole in the centre that the juice may escape through it, and thus add a rich flavour to the paste. The pudding may be turned out of the dish and served either hot or cold, with or without custard or sugar over it.

This pudding may also be boiled in a cloth.

305. Stew a pound and a half of ripe red gooseberries in a jar put in the oven, or in a saucepan of water, until they will pulp ; take a pint of the juice after being passed through a coarse sieve ; add three eggs well beaten, an ounce and a half of butter, some sugar and crumbs of bread, or Naples biscuits ; mix the whole well and bake as above.

306. Apples grated, or green gooseberries stewed and pulped through a coarse sieve, four ounces ; bread crumbs three ounces ; sugar two ounces ; one egg ; butter two ounces ; milk two table-spoonfuls ; a little juice and grated peel of lemon. Mix the ingredients well together, pour the mixture into a buttered mould or basin, and boil the pudding in a steamer for an hour nearly ; or bake it in an oven. When ready, pour over it a little arrowroot sauce with or without sherry wine. This pudding is palatable and nutritious, and may be varied according to taste by altering the proportions of bread crumbs, eggs, etc.

307. Apples chopped small, eight ounces ; bread crumbs eight ounces ; currants eight ounces ; sugar six ounces ; eggs five, well beaten.

Or, apples eight ounces ; bread crumbs four to eight ounces ; currants and raisins two ounces each ; sugar four to six ounces ; eggs four or five ; rind of a lemon grated, or pared quite thin and chopped small.

Peel, core, and chop the apples small ; add the bread crumbs, currants, raisins, sugar, and lemon peel ; then the eggs well beaten. Boil the pudding three hours in a buttered mould or basin or cloth, and serve with sweet sauce, or bake it at a moderate heat. This has been called *Eve's Pudding*. Other fruit may be substituted for the apples ; and from four to six ounces of butter may be added.

308. Spread stewed fruit, jams, or chopped raisins, etc.,

between slices of bread in a mould, then pour over the whole warm milk mixed with well beaten eggs; cover the mould with a cloth and boil the pudding twenty minutes.

309. Large apples four; sago five ounces; sugar and lemon flavour according to taste. Prepare the apples as for apple-sauce; boil the sago in a small quantity of water; add the apples, sugar, and flavour, and bake in a pie-dish.

310. Red currants and raspberries mixed, two pounds; sugar one pound. Mix the fruit and sugar, then fill a pudding dish with alternate layers of fruit and slices of bread without crust, leaving a thick layer of fruit at the top. Bake the pudding nearly an hour.

311. Minced apples eight ounces; mashed potatoes four ounces; sugar four ounces; eggs four, beaten and strained; a little lemon peel or nutmeg. Bake thirty minutes.

312. Figs eight ounces; sugar four ounces; grated bread eight ounces; butter four ounces; eggs two; candied lemon one ounce; seasoning to taste. Beat the eggs; cut the figs into small pieces and steep as at 285; mix all the ingredients together, and steam or boil the pudding one hour in a basin or mould.

313. Wheat meal and Indian meal two handfuls each; crumb of bread two ounces; apples four, chopped small; currants washed and picked four ounces; raisins stoned four ounces; sugar two ounces; candied lemon one ounce; the peel of a lemon and a little nutmeg grated. Mix all well together with a very small quantity of water; put the mixture in a basin, mould, or cloth tied close, and boil the pudding two or three hours.

Fruit and Batter Puddings.

314. Pare and core six good baking apples; fill the cavity of each with sugar; place the apples in a buttered pie-dish, and pour over them a nice light batter and bake at a moderate heat.

315. Cut four or five apples in halves, remove the cores but not the skin. Beat two eggs and add them to a cupful of flour, mixed smooth with a pint of milk; pour the batter into a well buttered dish or tin; lay the apples in it rind uppermost, scatter a few pieces of butter over them and a little nutmeg or other

seasoning when preferred. Bake one hour in a moderately heated oven, and serve with pounded sugar sprinkled over.

316. Nearly fill a well buttered pie-dish, basin, or mould with fruit; cover it with a light batter and bake. Or, put in first a layer of batter and place it in the oven till the batter is sufficiently set; then add a layer of fruit, etc., finishing with a layer of batter. The sugar necessary should be added after baking; if added sooner it will render the pudding heavy.

317. Damsons, currants, gooseberries, rhubarb, or cut apples, etc., eight ounces; flour eight ounces; milk one pint; yolks of eggs four; whites two; baking powder half a tea-spoonful; salt one tea-spoonful. Rub the baking powder till smooth and mix it well with the flour; add the salt, and as much milk as will make a stiff batter; beat it till quite smooth, then add the eggs well beaten and the remainder of the milk. Put the fruit in a buttered dish; pour the batter over it, or stir the fruit into the batter and bake at a moderate heat; or boil it in a cloth an hour and a half, or in a mould fifteen minutes longer. Serve the pudding with sugar, melted butter, and lemon juice.

318. Fill a mould or basin that will hold a pint and a half, with fruit; then pour in a batter made with four table-spoonfuls of flour; two or three eggs; and half a pint of milk. Tie a buttered or floured cloth over, and boil the pudding an hour and a quarter.

Apples pared, cored, halved, and mixed with a good batter, make an excellent pudding for baking; also red currants, cherries, and plums of various sorts.

319. Lay in a rather deep pie-dish some thin slices of French roll, or light bread, spread with butter and covered with a thick layer of mince-meat (417 to 419); place a second layer lightly upon these, covered also with mince-meat; then pour in gently a custard made with three well beaten eggs; three quarters of a pint of new milk, or thin cream; a very small portion of salt, and two ounces of sugar. Let the pudding stand to soak for an hour, then bake it gently for nearly an hour, or until it is quite firm in the centre.

320. Apples grated eight ounces; sugar eight ounces; butter six ounces; eggs six; rind and juice of a lemon. Rub the

lemon rind on the sugar; mix the whole well, and bake the pudding quickly. Eat it while warm, as pudding, or when cold, as cheese-cake.

321. Peel and cut some apples as for a tart; fill a dish three parts full; shake powdered sugar over the apples; cover them with apricot jam, then with butter. Mix three table-spoonfuls of arrowroot with a pint of new milk, a little cream, sugar, and butter; stir it over the fire till it boils; if too thick, add a little more milk; it should be just thick enough to run smoothly; pour it over the apples and let the whole stand till quite cold; then bake at a moderate heat for an hour and a half; or half this time for a small pudding.

322. Vegetable marrows one or two pared and sliced very thin; add a little cream, and put them into the oven till softened; remove them, and when cold add from two to four well beaten eggs, add also some new milk, sugar, nutmeg, and a little butter. Bake twenty minutes. Two table-spoonfuls of fine bread crumbs may be added.

323. Vegetable marrow or cucumber, one middle sized one; eggs three; bread crumbs one table-spoonful, parsley and leeks mixed, a quarter of an ounce. Half boil the marrow; peel and cut it in pieces, removing the seeds and pulp; put it in a flat dish with a little butter melted; season with pepper and salt, and bake about twenty minutes, at a tolerable heat. Beat the eggs well, add the bread crumbs, parsley, and leeks; pour them over the marrow, let it remain in the oven till well browned, and serve with brown sauce.

324. Vegetable marrow one middle sized one; meal or flour three ounces; cold boiled rice three ounces; sugar four ounces; grated peel of half a lemon; a few currants, and sufficient water to make the whole into a batter. Cook the marrow as above, then mix and bake one hour and a quarter slowly.

325. Rice half an ounce; milk half a pint; a little butter, sugar, cinnamon, and salt; one middle sized apple, peeled, cored, and sliced; one egg. Boil the rice in the milk till soft; stew the apple with a little sugar and butter, and a spoonful of water, till tender. Put the apple in a small tart dish; mix the egg with the rice, pour it over the apple, and bake ten minutes.

Grain or Seed Puddings.

326. The seeds of the *Gramineæ* and *Leguminosæ* (21, 28), when boiled or creed in water or milk (106), may be made into puddings, by adding a little more water or milk, sugar, and a few grains of salt. The whole may be put into a well buttered dish, and baked at a moderate heat; or into a basin or mould, and boiled with a cloth tied firmly over it. The ingredients may also be mixed together and placed in an oven without previously creeing the grain, but to cree it first is preferable.

When milk and eggs are scarce, wash and pick the grain well, put it in a saucepan with as much water as it will absorb; add a little salt, and boil gently, till the grain is tender, and the water absorbed; then add currants or raisins, well washed and picked; put the whole in a buttered basin, cover it with a cloth, and let it boil an hour. Sliced apples, etc., may be used instead of currants or raisins.

327. Sago, tapioca, and all kinds of seeds should be washed and soaked in water an hour or more before they are made into puddings, in order to remove earthy and other unpleasant flavours.

Half a pound of rice may require two quarts of milk; barley will require more.

These puddings may be enriched and flavoured by adding butter, cream, eggs, cinnamon, nutmeg, lemon-peel, etc.

The eggs should be well beaten, and added to the other ingredients, when the latter are rather cool; but eggs are seldom required for rice or other seed puddings.

These puddings may also be varied by adding currants, raisins, apples pared, cored, and quartered, or chopped small; or, for a savoury pudding, onions chopped small, sage, marjoram, etc.

Two or more of the creed grains may be mixed together with advantage, as two parts rice, and one part Scotch barley; two parts rice, and one part split lentils, etc.

Barley should be creed longer than the rice. Any of the creed grains may be mixed with soaked bread, bread crumbs, etc.

Puddings require nearly twice as long boiling as baking.

Rice Pudding.

328. Proceed according to the general directions (326).

329. Or, simmer two large table-spoonfuls of rice in half a pint of milk till thick; add an ounce or two of butter, and nearly half a pint of cream; give it one boil, and, when cold, add four yolks and two whites of eggs well beaten; also sugar, nutmeg, grated lemon peel, cinnamon, or other flavouring if desired.

Butter some small cups, fill them three parts full, placing at the bottom citron, orange marmalade, etc. Bake three quarters of an hour at a gentle heat. Serve with sweet sauce.

330. Rice four ounces; new milk a pint and half; butter two ounces; sugar three ounces; eggs four; rind of half a lemon.

Wash the rice, then stew it slowly in the milk till quite tender; before taking it from the fire stir in the butter and sugar; and when nearly cold add the whisked eggs and the lemon peel. Bake in a gentle oven thirty or forty minutes.

The rice may be partially stewed in water; then in a pint of milk and a little cream. The eggs and lemon rind may be omitted for a good plain pudding.

Potted Meat.

331. Rice four ounces; butter three ounces; yolks of eggs three; bread crumbs three ounces; potatoes boiled, dried, and mashed two ounces. Mix the rice and other ingredients well together, adding also a little pepper, salt, and mace. Put the mixture down in a pot and pour clarified butter over it.

Rice and Tapioca.

332. Rice two table-spoonfuls, creed in water; add a little salt, and set it by the fire till the rice is quite soft and dry. Put it in a bowl, add two ounces of butter; four table-spoonfuls of tapioca previously washed; milk a pint and half; a little grated nutmeg; sugar to taste, and two eggs well beaten; stir all together, then put the mixture in a buttered dish, and bake one hour.

Rice and Onions.

333. Rice four ounces; one middle-sized onion. Cree the rice in water, add a little butter, pepper, etc. Boil the onion till tender, chop it fine, and mix it well with the rice; put the whole in a dish and bake. See 107 *g*.

Rice and Split Lentils, or Peas, etc.

334. Take of each two table-spoonfuls; milk three-quarters of a pint; sugar one ounce; almond flavour two or three drops. Cree the rice and lentils in milk or water twenty minutes; add the sugar, milk, etc., and bake twenty minutes. Some will prefer one-third split lentils with two-thirds rice.

Pearl Barley.

335. Pearl barley four ounces; sugar two to three ounces; salt half a tea-spoonful; milk two pints. Soak the barley for a few hours in cold water; pour off the water, add the sugar and milk, and let the whole simmer gently for two or three hours; then bake at a gentle heat. If a richer pudding be required, remove it from the oven when nearly enough; stir in butter one to two ounces; eggs two or three; return it to the oven till sufficiently baked.

For a savoury pudding use water instead of milk, and onion one or two ounces; powdered sage half a tea-spoonful; marjoram one quarter of a tea-spoonful; butter one ounce, and leave out the sugar.

Sago Pudding.

336. Sago four ounces; eggs two to four; sugar two or three ounces; butter two ounces; milk a pint and half.

Simmer the sago in the milk till it thickens, with a little broken cinnamon and lemon peel in a muslin bag. Put a border of thin puff paste round a pudding dish; remove the spice bag from the sago, stir in the sugar and butter, and when nearly cold, stir in the eggs previously beaten and strained; mix the whole well, and bake at a gentle heat till the pudding is set. If too much heat be used, the whey will be separated (376). Nutmeg or other seasoning may be sprinkled over the pudding before it is baked.

Instead of being baked, it may be boiled in a buttered basin or mould an hour and half.

Peas Pudding.

337. Boil the peas, whole or split, in a cloth loosely tied, two or three hours, or till they are soft; then pulp them through a sieve; add salt, pepper, butter, and some well-boiled potatoes, also passed through a sieve; mix them all well together, tie them up firmly in a cloth, and boil them half an hour; then serve the pudding with melted butter.

Instead of potatoes, creed rice, whole or ground, may be used; some also add eggs well beaten. See 110 *c*.

Haricot Bean Pudding.

338. Haricot beans half a pint; bread crumbs two table-spoonfuls; eggs four; parsley half an ounce; milk half a tea cupful; olive oil one table-spoonful, or butter two ounces; a little cream would be an improvement. Steep the beans in cold water several hours; put them in cold water and boil them till quite soft; mash them with milk and rub them through a fine colander; add the bread crumbs, parsley chopped fine, eggs well beaten, olive oil or butter, salt and pepper. Bake the whole in a buttered dish, and serve with brown sauce.

Hominy Pudding.

339. Hominy four ounces; milk a pint and quarter; eggs three; sugar two to four ounces; steep the hominy twelve hours in half the milk; add the remaining milk and the eggs well beaten; a little cinnamon, and three drops of almond flavour. Bake in a moderate oven.

Or, having washed and steeped the hominy, boil it till quite soft, add the sugar and seasonings when used, and when nearly cold add the beaten eggs; then bake.

Mannacroup may be used in the same way.

PUDDINGS MADE OF GROUND GRAIN, ETC.

340. Puddings of this kind may consist of paste, bread, cake, muffin, biscuit, etc., either in slices or crumbs; also of

wheat meal or flour, oatmeal, barley meal, hominy, ground rice, vermicelli, macaroni, roots, or tubers, sago, tapioca, arrow-root, etc.

These puddings may be arranged in two divisions.

1st. Those which are of a rather firm consistency, as paste puddings or dumplings, bread puddings, plum puddings, etc.

2nd. Those which are cooked in a fluid, or semi-fluid state, generally called flour or batter puddings, custard puddings, etc.

Paste-Puddings or Dumplings.

341. Flour one pound; baking powder a quarter of an ounce; butter one ounce; salt a tea-spoonful. Mix with cold water to a stiff paste.

Or, take one pound of bread dough (better when made with milk), divide it into six equal portions, mould it into dumplings and drop them into fast boiling water; boil them from twelve to fifteen minutes. Serve immediately with melted butter, sugar, and vinegar or verjuice, or with boiled treacle. They should not be cut with a knife, but torn asunder, and it is advisable to do this before they are served, or they may be rendered sad by their own steam. Push a fork into the dumpling, and if when withdrawn, it is free from paste, the dumpling has been sufficiently boiled.

A little butter, one and a half ounces to the pound of flour, may be added to the dough, also a few currants if preferred.

Bread Puddings.

342. These may be prepared in various ways.

1. Rolls or thick portions of bread, and cake, may be saturated with a pudding mixture.

2. Slips or slices of bread, cake or muffin, plain or buttered, may be laid in layers in a plain mould, and covered with a pudding mixture.

3. Bread crumbs and other ingredients may be mixed well together and boiled in a cloth; or baked, or steamed in a dish, mould, or cups.

Bread puddings are very good without eggs, but in that case no more milk should be used than is just sufficient to mix the

other ingredients, and the pudding should be boiled long and quickly; from three to five hours or more.

To mix the ingredients, see 119, and respecting the pouring of hot fluids over bread, see 58.

A few spoonfuls of fresh small beer, or one of yeast, or a very little baking powder, may be used to render a pudding light, instead of eggs. A little ground rice, or a mealy potato, grated while hot, and beaten well with a spoonful of milk will also make it lighter.

Bread puddings are also lighter and moister when closely tied in stout cloths well floured, than when boiled in moulds; a plate or dish placed under them, will prevent them adhering to the bottom.

343. Upon a baker's roll, cake, or portion of bread of convenient form weighing about eight ounces, repeatedly pour a mixture consisting of a pint of milk, or milk and cream, and from one to four eggs; or, one egg; flour two tea-spoonfuls; brown sugar three tea-spoonfuls; milk one pint, salt a little. Repeat the pouring till the whole fluid has been absorbed by the bread; then steam it on a plate till quite hot through. Serve with sweet sauce. A little powdered cinnamon may be sprinkled on the top; or it may be covered with marmalade or finely chopped almonds. Or blanched almonds may be stuck in, and a rich custard poured over it.

344. Thickly butter a plain mould or basin; arrange raisins, currants, or dried cherries after any pattern at the bottom and sides of the mould; lay slips or narrow slices of cake, muffins, sponge cake, ratiffias, macaroons or other sweet cakes, or a mixture of them, in the mould till about three-quarters full; pour over them milk, or milk and cream mixed, or a custard mixture (1, 2, or 3, 380). A few more raisins or currants may also be put between the layers. Lay buttered writing paper, and a floured cloth over; then boil the pudding half an hour, or steam it forty-five minutes.

The mixture should be poured on gradually, allowing the bread to absorb one portion before another is added. If baked, the bread should soak two hours before the pudding is put in the oven, which should be at a moderate heat.

345. Line a plain buttered mould or basin with slices of cold plum-pudding, join and press them well; then nearly fill the mould with a custard mixture as above; cover the top with slices of pudding, or with a buttered paper and floured cloth. Bake from thirty to sixty minutes; or, tie it securely and boil or steam it.

346. Cover the bottom of a deep pie-dish with thin slices of bread baked the previous day; put upon them small portions of preserves at short distances; cover these with thin slices of bread, and repeat the alternate layers of fruit and bread till the dish is three parts full; then pour a custard over and let it remain till next day. It requires no heat and should be eaten cold. The custard may be made thus; boil a pint of new milk, to which two ounces of sugar, two bay leaves, and a little cinnamon have been added; beat up the yolks of two eggs and add them to the milk by degrees; then put it on the fire and stir it till thick, but do not permit it to boil; while it is hot pour it over the pudding; cover it immediately and let it remain till next day; then turn it out on a dish, and beat up the whites of the two eggs to a froth and put it lightly on the pudding.

347. Bread, toast, or bread and butter sixteen ounces; sugar four ounces; currants two to eight ounces; butter two ounces; eggs three. Soak the bread in cold milk or cold water for an hour or two (*58*), putting a plate upon it to keep it under the fluid, of which there should be little more than sufficient to cover the bread; if water be used, press the bread, after soaking, in a colander to remove all the water from it; return it to the pan, add a dessert-spoonful of flour, and the other ingredients. Mix the whole well with a wooden spoon, and bake in a buttered dish an hour and a half or two hours. Half the peel of a fresh lemon may be grated and added, a little ginger or other seasoning; treacle may be substituted for sugar.

348. (*a.*) Bread crumbs four ounces; sugar two to four ounces; butter two to four ounces; eggs two to four; milk one pint. Boil the milk and with it the bread crumbs, or pour the boiling milk over the crumbs, and when well soaked, add the other ingredients; line a dish with paste, cover the bottom with preserve or marmalade, pour in the mixture and bake one hour.

The milk may be flavoured with bay leaves, or lemon rind, etc.

(b.) Bread crumbs four ounces; sugar two to four ounces; butter two to four ounces; eggs two to four; cream or milk one-eighth to half a pint; currants and raisins four ounces each, picked, stoned and cleaned. Soak the bread crumbs, beat and strain the eggs, to which add the milk gradually, then mix and beat all well together, and bake or steam the pudding in a dish, or in cups three parts full; or steam or boil it in a cloth, or in a mould with a cloth over it, from two to four hours, according to the size. The mould may be buttered and stuck round with raisins. The mixture may also be fried. Two ounces of flour or of ground rice or sago may be substituted for two ounces of the bread crumbs; savoy biscuit or other light cake may supply the place of bread. The currants and raisins may be omitted, and the rind and juice of a quarter of a lemon added; but for a plum pudding they should be retained; some add cinnamon, mace, nutmeg, or other seasoning. A table-spoonful of treacle will give the pudding a rich brown colour. Serve with custard, cream sauce, or sweet sauce.

349. Bread crumbs four ounces; sago two ounces; milk one pint; sugar two ounces; eggs two; lemon rind finely minced, and a little of the juice. Boil half the milk and pour it over the bread crumbs; wash the sago in two waters; mix it with the remainder of the milk cold; beat the eggs, then mix the whole and beat it; butter a mould and bake twenty minutes, or steam it one hour. Pour tapioca or arrowroot sauce over it and serve.

Semolina Pudding.

350. Semolina four ounces; milk one pint and a half; sugar three ounces; butter two ounces; salt a little; yolks of eggs four; whites three, well beaten. Some add the thin rind of half a lemon infused in the milk, and two or three bitter almonds. Mix (117 *g.*) When the mixture is nearly cold, pour it gently into a buttered dish or mould prepared as for gâteau de riz (153), and bake from three quarters of an hour to an hour or more in a very gentle oven. Mannacroup and hominy may be prepared in the same way. Hominy should be previously steeped.

Vermicelli Pudding.

351. Vermicelli four ounces; milk one pint, half a pint of cream may also be added; sugar three ounces; yolks of eggs four; butter one ounce. Boil the vermicelli in the milk with a little cinnamon; when rather thick pour it into a basin and stir in the butter, sugar, and cream; when cool add the yolks of eggs previously well beaten; bake the pudding in a buttered dish, with or without an edging of paste; or steam it one hour in a basin or mould. Apples pared, cored, and quartered, or other fruit, may be added before the pudding is put in the oven.

Macaroni Pudding.

352. Macaroni four ounces; milk one pint; cream a quarter of a pint; eggs four; sugar four ounces.

353. Or, macaroni four ounces; cream a quarter of a pint; eggs three yolks, one white; a little pepper and salt; grated cheese three spoonfuls. Boil the macaroni till nearly tender, then steam the whole in a pudding mould one hour.

Tapioca Pudding.

354. Tapioca two ounces; eggs three and two yolks; butter one ounce; sugar to taste and a little nutmeg; milk one pint. Pound the tapioca in a mortar and simmer it gently in the milk; whisk the eggs to a froth; add to them the butter, sugar, and nutmeg; mix them with the tapioca while hot and bake in a dish.

355. Or, tapioca one table-spoonful; bread crumbs eight ounces; onions one ounce; sage half a table-spoonful. Boil the tapioca in rather less than half a pint of water till dissolved; stir in the other ingredients with a little pepper and salt, and bake the whole in a buttered dish. The onions should be previously boiled.

Forcemeat Pudding.

356. Bread crumbs four ounces; one egg; butter one ounce; parsley a dessert-spoonful; a little cream, pepper, salt, nutmeg; and of sweet marjoram, winter savory, and lemon thyme mixed, a quarter of an ounce, or the same quantity of lemon rind.

357. Bread crumbs eight ounces; flour a dessert-spoonful; beet one ounce; minced leeks, onions, or eschalots a quarter to half an ounce; eggs four to six; butter two to three ounces, and the other ingredients as above. Thick cream will well supply the place of both butter and eggs; an ounce of tapioca may also be added as sauce. Mix all the ingredients well together by any approved method, or rub the butter and flour into the bread crumbs; add the chopped herbs, etc.; mix all together with two beaten eggs, or with the cream; dissolve some butter in a tin, put in the forcemeat and bake before the fire or in a Dutch oven, occasionally adding a little butter; when brown on one side turn it over, and when sufficiently done serve with brown sauce. Or roll the mixture into rather small balls and lay them in a pie-dish; steep the tapioca ten minutes in half a pint of water; pour it over the balls; add three eggs boiled hard and cut into small pieces; cover with paste and bake. It may be eaten either hot or cold. The mixture may also be fried as fritters, or made into small balls rolled in egg and bread crumbs, and fried or baked in the oven till crisp and brown. Serve with brown sauce and eat them with potatoes and currant jelly or gooseberry solid.

See Rissoles, 472.

358. Bread crumbs one breakfast-cupful; eggs two; one middle-sized onion boiled and shred fine; parsley shred fine one tea-spoonful; a little butter, and sufficient cream to make a light mixture; pepper and salt, a little of each. Beat the eggs, then mix all well together; butter some cups, into which pour the mixture till they are nearly three quarters filled; bake the puddings slowly for about twenty minutes. Serve with brown sauce. This pudding is usually very much relished.

Puddings Made with Roots, Tubers, etc.

359. Potatoes boiled and mashed eight ounces; eggs one to four; sugar one to three ounces; butter one or two ounces; lemon rind a quarter to half an ounce; salt a few grains. Mix all the ingredients well together and bake them in a dish. A quarter of a pint of milk may be added if requisite, and one ounce of grated cheese with a little pepper or other seasoning, instead of

the sugar and lemon rind. This pudding may be eaten as cake when cold; the mixture may also be fried as fritters.

360. Potatoes boiled and mashed two ounces; butter two ounces; eggs two; cream a quarter of a pint; salt very little, and sugar to taste. Beat all to a froth and bake with or without a crust. Some add to the ingredients a table-spoonful of white wine.

361. Potatoes four ounces; carrots four ounces; bread crumbs or flour, etc., four ounces; sugar one to four ounces; butter two to four ounces; currants or raisins four to eight ounces; lemon rind two ounces; nutmeg and cinnamon together half an ounce. Wash the potatoes and carrots, grate them and mix their pulp and the other ingredients well together; put the mixture into a mould or basin, and boil or steam the pudding three hours or more. A large spoonful of treacle may be added to the mixture.

362. Carrots four ounces; bread crumbs four ounces; eggs one to three; sugar one to four ounces; butter one to four ounces; milk one quarter to three quarters of a pint. Mix well and bake.

363. Potatoes four ounces; carrots two ounces; bread crumbs four ounces; sugar two ounces; butter two ounces; currants or raisins six ounces.

364. Mashed potatoes four ounces; boiled carrots two ounces; flour four ounces; currants and raisins four ounces of each; sugar three ounces; butter two ounces; a little nutmeg and a very little salt. Bruise and beat the carrots to a paste, mix the whole well and boil it in a cloth from two to four hours. One egg would improve it.

365. Parsneps boiled and the water squeezed from them, four ounces; yolks of eggs two; bread crumbs four ounces; a little cream. Mash the parsneps well, and add the other ingredients. Make the mixture sweet or savoury, as may be desired; beat the whole well together; line a dish with paste, and bake in a moderate oven. Creed rice or rice flour may also be added.

Parsneps and potatoes, or parsneps, beans, and rice, may be used in the same way.

366. Onions two to six ounces; bread crumbs eight ounces;

butter one or two ounces; sage one tea-spoonful; thyme half a tea-spoonful; pepper and salt a little of each.

Peel and boil the onions, chop them small, mix them with the other ingredients, and boil the pudding in a basin; or bake it in a dish lined with paste. Two eggs, and three quarters of a pint of milk may be added to the mixture.

Four ounces of boiled rice or boiled potatoes may be substituted for four ounces of the bread crumbs.

Green Bean Pudding.

367. Fully grown, mealy, green beans one quart; cream two table-spoonfuls; yolks of eggs two.

Boil the beans till quite tender; peel and mash them with a little pepper and salt, till quite smooth; add the cream and yolks of eggs previously well beaten; boil the pudding in a basin during one hour, and serve it with parsley sauce.

The colour may be improved by adding two table-spoonfuls of spinach, boiled, and cut small.

368. Bread crumbs sixteen ounces; onions eight ounces; macaroni four ounces; parsley three ounces; tapioca one table-spoonful; olive oil two table-spoonfuls; baking powder one tea-spoonful.

Boil the macaroni till tender, but not soft; drain it, and when cool cut it in pieces; boil the tapioca in a quarter of a pint of water, six minutes; boil the onions and chop them; then mix all well together, except the tapioca and oil; adding a little pepper and salt. Put the oil in a dish, and add a layer of the mixture and macaroni alternately. Three layers of the mixture, two of the macaroni. Bake the pudding in a moderate oven, and when ready, turn it out upon a dish.

Herb Pudding.

369. Parsley leaves two handfuls; spinach one handful; hearts of lettuces two; mustard and cress one large handful; a few leaves of white beet, and a small handful of chives.

Wash and boil all the herbs together for three minutes; drain the water from them, then mash and mix them well, adding pepper and salt. Stir in a batter consisting of flour one ounce;

thin cream one pint; eggs two. Put the whole in a dish, and cover with a good crust.

Mushroom Pudding.

370. Chopped mushrooms one handful, to which add parsley and green onions, pepper and salt. Boil the whole in water or vegetable broth till thick; beat six eggs or more. Mix all together, adding a few bread crumbs. Bake the pudding quickly in small buttered cups.

371. Mushrooms one pint; bread crumbs eight ounces; butter two ounces. Rub the butter in the bread crumbs; add pepper and salt, and as much water as will just moisten the bread; then add the mushrooms cut in pieces.

Line a basin with paste, put in the mixture, cover the whole with paste, tie a cloth over, and boil the pudding one hour and a half; or bake it.

Cheese Pudding.

372. Grated cheese four ounces; eggs four, yolks and whites beaten separately; flour three tea-spoonfuls; milk about three quarters of a pint; butter one ounce and a little salt. Mix the flour with a little cold milk; dissolve the butter in the remaining milk, and when it boils pour it over the mixed flour, then add the cheese and yolks of eggs; add the whites immediately before putting the pudding in the oven.

373. Grated cheese four ounces; eggs two; milk or cream two or three spoonfuls; butter one ounce; cayenne and nutmeg a very little of each.

Butter a dish, and bake the pudding about fifteen minutes. See 270.

BATTER PUDDINGS.

374. The batter for puddings should be neither too stiff nor too liquid; if too stiff it cannot expand sufficiently, and consequently the pudding will be hard and tough; if too liquid the flour and other solid particles will descend, and the pudding will be denser at the bottom than at the top. When fruit is added the batter must be made thicker, or the fruit will sink. It is advisable to strain the batter well; the eggs first, then the whole.

Flour puddings will be improved by mixing the ingredients,

except the eggs, some hours, or even a day before they are cooked. When milk is used, the batter should not be mixed more than an hour or two before it is cooked, especially in hot weather, it should also be set in a cool place. Batter puddings expand more and consequently are lighter when boiled than baked, and they should be rather overboiled, than not boiled long enough.

As flour is improved by long boiling, and milk injured by it, water is preferable to milk in making batter for boiled puddings; on the contrary, milk is better for baked puddings, which are improved by being baked quickly.

Boiled Batter Puddings.

375. See 60. Batter will be lighter when boiled in a cloth than in a mould; it should be well beaten immediately before it is poured in, and put into boiling water as soon as it has been secured with a string, or inclosed in the mould.

The cloth should be tied loosely for a bread pudding, but tightly for a batter pudding; unless the cloth or the mould be well filled with the batter, the water will enter and break the pudding. The pudding should be kept in motion for a few minutes after it has been put in the water to prevent the batter from settling, and the cloth from adhering to the bottom of the pan; a plate put in the pan will serve the latter purpose. The water must be kept boiling till the pudding is enough, or it will be sad and heavy, or, if a bread pudding it will be broken and watery.

Keep the pudding covered with water all the time it is being cooked, and, if necessary, add fresh boiling water to supply the loss by evaporation.

Dip the pudding in cold water when removed from the pan; the pudding will then more easily leave the cloth.

To serve the pudding, place it with the cloth in a basin; open the cloth and lay the face of the dish upon the pudding, turn the whole over, take off the basin, remove the cloth, and serve immediately, or it will become sad.

Baked Batter Puddings.

376. See 63. The batter for a baked pudding should not fill the mould within an inch or two; if the mould is too full,

the batter will boil over in the oven, before the flour expands and thickens.

All puddings of the *custard kind*, whether made of eggs and milk only, or of these with sago, arrowroot, rice (ground or in grain), vermicelli, etc., require a very gentle oven, and would be spoiled by too great a heat, the whey separating from the caseine and albumen.

Tapioca should be well bruised, or the yolk of eggs used with it will separate.

Simple batter puddings should be baked in a rather brisk oven, and the butter, previously put in the dish, should be boiling hot before the batter is poured in, if it is intended that the pudding should be crisp.

When raisins are used, the oven should be well heated, but not too hot.

When whisked whites of eggs are used, as for soufflés, they should be stirred gently into the mixture just before it is tied up for boiling, or before it is put into the oven, the pudding will then be very light, but it will fall soon after it is removed from the oven.

When a pudding is sufficiently brown on the surface, before it has been well baked through, lay a sheet of writing paper over it, but not before it is set; when quite firm in the centre, it will be sufficiently baked.

Batter puddings may be made either thin, as where much milk or other fluid is employed; or the batter may be made stiff with eggs and butter only.

Batter for pancakes requires about half a pint of liquid to four ounces of flour; for a Yorkshire pudding the batter should be made rather stiffer.

Batter Pudding.

377. Flour four ounces; milk or cream, or a mixture of the two, half a pint to a pint; eggs one to four. Sugar and butter may be added in the proportion of from two to four ounces of each; and currants, raisins, or seasoning, when preferred; some also add a little salt, others substitute water for milk, and boil a little seasoning in it.

Mix according to 115 *g*.

Fill a floured pudding cloth with the batter, and tie it tight; or buttered tea-cups, or small pudding basins, with a cloth tied over each; plunge each pudding into boiling water, and let it boil fast during half an hour, or an hour and a quarter, according to size; or cook it by steam. The pudding should be just firm enough to stand, when removed from the cloth or mould.

Or, bake in buttered tea-cups, saucers, basin, or pie-dish, three parts full of batter, during fifteen minutes or more, according to size, or in a shallow dish, as a Yorkshire pudding.

The pudding may be served with butter-sauce and currant jelly, or with sweet-sauce; or with butter and salt, or sugar, etc.

REMARKS.—Oatmeal, maize meal, etc., may be used instead of wheat flour. Half a pint of fluid may be sufficient for a boiled pudding; a baked one should be made much thinner. Baking is said to render eggs less easy of digestion than boiling or steaming; hence puddings for invalids should be boiled or steamed.

If milk be used for a baked pudding, one egg will be sufficient. From a quarter to half a tea-spoonful of baking powder will add much to the lightness of the pudding.

To render the pudding savoury, introduce a little chopped parsley and other herbs, or onions, etc., instead of sugar.

Batter made with Biestings.

378. See 45. Flour four ounces; biestings one cupful; milk nearly a pint. Mix the flour with a little of the milk, and when quite smooth stir in the remainder of the milk and biestings.

Boil, steam, or bake as above. No eggs are required when biestings are used.

Ground Rice Pudding.

379. Ground rice four ounces; milk one pint; eggs one to four; butter two to four ounces. To these may be added currants one ounce; raisins four ounces; and grated lemon rind when preferred.

380. Or, ground rice four ounces; milk one pint and a half; eggs two; sugar two ounces; butter one ounce.

Mix according to 115 *f*. Butter a mould and shake into it as much very finely grated bread as will adhere; then pour in as much of the mixture as will nearly fill the mould, and bake half an hour.

Or, boil for ten minutes with lemon peel, and line a dish with paste, pour in the rice, and bake half an hour.

Patent barley, tapioca, tous-les-mois, arrowroot, etc., may be used in the same way as ground rice. About two ounces of each will be sufficient for a pint of milk. See 354.

Equal quantities of pease meal and ground rice; revalenta and prepared barley may also be used.

Indian Meal Pudding.

381. Indian meal or maize flour eight ounces; boiling water nearly one pint; molasses two ounces; salt one-sixth of an ounce. Mix all well together; pour the mixture into a pudding cloth, previously dipped in boiling water; leaving a space equal to about one-sixth of the contents; boil the pudding six hours without intermission.

Molasses make the pudding lighter, and in some measure supply the place of eggs.

Dried cuttings of sweet apples (72), may be added in the proportion of three ounces of the apples to eight ounces of meal.

This pudding is generally eaten with butter.

Oatmeal Pudding.

382. Oatmeal one pint; boiling milk two pints; eggs two; salt a little. Pour the boiling milk over the oatmeal, and let it soak all night. Add the eggs well beaten; butter a basin that will just hold it; cover it tightly with a floured cloth, and boil it an hour and a half. Eat it with cold butter and salt. When cold, slice and toast it, and eat it as oat cake buttered.

Sutherland or Castle Puddings.

383. (*a.*) See 173. Flour four ounces; eggs two to four; butter two to four ounces; sugar four ounces. Mix according to 117 *d*. Bake the puddings in well buttered cups, or steam them from twenty to twenty-five minutes. The cups should be little more than half full.

Rice may be used instead of flour; or half rice, half flour; or half rice, half pease meal, etc. Raisins or other prepared fruit may be added.

(*b.*) Flour eight ounces; eggs four; butter eight ounces; sugar eight ounces; raisins, a handful, and the rind of a lemon.

Mix as at 117 *d*, and boil in a mould for six hours.

Soufflés.

384. Soufflés are a light kind of puddings, and the mode of making them is the same, whether the principal ingredient be whole rice or other grain boiled till very tender in milk, and pressed through a sieve; bread crumbs soaked and passed through a sieve; or ground rice, arrowroot, potato flour, etc. The pudding is raised by stirring gently to the other ingredients the whites of eggs whisked to a very firm froth; this should be done immediately before the pudding is put in the oven. The pan should not be quite half full; bake in a moderate oven for thirty or forty minutes, and keep the door closed fifteen minutes at least, after the pudding is put in. Serve it immediately after it is removed from the oven.

385. Ground rice four ounces; milk or cream a pint and a half; butter two ounces; sugar two ounces; eggs six.

386. Potato flour two ounces; milk a quarter of a pint; cream one pint; butter two ounces; sugar two ounces; eggs six. Flavouring when required. Mix as at 115 *h*.

387. Potato flour, arrowroot, or tous-les-mois two ounces; milk one pint; or milk a quarter of a pint, cream three-quarters of a pint; butter two ounces; salt a tea-spoonful and a little less of cayenne; lightly grated cheese three ounces; eggs four.

Custard Pudding.

388. Flour or ground rice two ounces; milk or cream one pint; eggs four to six; sugar two ounces; cinnamon or other flavouring. Beat the eggs with the sugar and flour; stir in the milk gradually. Simmer or steam the pudding in a buttered dish or in cups, or in a floured cloth about forty-five minutes; or bake it in a dish twenty minutes. A buttered basin may be stuck

round with about twenty large table raisins stoned, and the pudding turned out when boiled.

Or, boil the seasoning in the milk, let it stand till cold, then add the eggs and sugar as before. Two ounces of butter and six almonds may also be added.

Custard puddings should not be boiled, but simmered without ceasing; if too great a heat be applied, the surface will be honey-combed, and the whey will be separated (336, 376).

389. Milk one pint; cream half a pint; sugar three ounces; yolks of eggs eight. Infuse in the milk half a pod of vanilla in short lengths and bruised, simmer twenty minutes; strain it through muslin to the cream, add the sugar, set them on the fire, and pour them when they boil to the beaten yolks of eggs. Stir the mixture till nearly cold; boil it gently for an hour in a buttered mould or basin that will just hold it; let it stand for five minutes before it is turned out. Serve it with a syrup of fresh fruit or clear fruit jelly dissolved. The flavouring may be varied with bitter almonds, lemon rind, etc.

A thickly buttered sheet of writing paper should be laid between the custard mixture and the cloth before it is tied over, or the lid of the mould closed upon it. The mould should be well buttered and quite filled; when it has been removed from the water, the pudding should be left in the mould five or six minutes before it is turned out, to prevent it breaking or spreading about.

CUSTARDS, BLANC-MANGES, FRUIT CREAMS, ETC.

390. Custards are formed chiefly of eggs, cream or milk, and sugar.

Milk or cream one pint; eggs one to five; sugar two to four ounces.

It is better to use milk and cream in equal proportions. If the mixture is intended for cold custard to be used in glasses, the whites of eggs should be omitted. When few eggs and little cream are used, the mixture may be thickened with a tea-spoonful

of arrowroot, tous-les-mois, ground rice or potato starch previously mixed quite smooth in a little cold milk. It may also be flavoured with cinnamon, mace, lemon peel, laurel-leaves, vanilla, etc.

Add the sugar and flavouring to one-half of the fluid, and let it simmer ten minutes; or heat the same in a pitcher or jar placed in a vessel of boiling water; remove it from the fire, and when the yolks of eggs have been well beaten with the remaining fluid, add them to the hot fluid; place the whole over the fire again, and stir it till it become sufficiently thickened, but do not let it boil (144). Remove the custard from the fire and stir it occasionally till cold, then pour it into custard glasses, having first removed any undissolved seasoning. Or, put the custard into a mould, which place in a steamer containing very little water, and not too tightly covered. As soon as the custard will bear the weight of your finger, remove it from the steamer, let it stand till cold, turn it out of the mould, and garnish with whipped cream.

When cream can be had, no thickening and fewer yolks of eggs will be required.

391. When eggs and cream are scarce, a cheap custard may be made as follows:

Milk one pint; one yolk of egg; sugar one ounce; arrowroot one dessert-spoonful; flavour and mix as above.

Baked Custard.

392. Milk, or milk and cream one pint; eggs beaten three or four; sugar two ounces; nutmeg or other flavour when desired.

393. Or, milk half a pint; strong coffee or cocoa half a pint; eggs two to four; sugar two ounces.

Line a dish with good paste, pour in the custard, and bake it half an hour; or pour it into cups and bake or steam it ten minutes or more.

Some boil half a pod of vanilla, or a little cinnamon, etc., in the milk about twenty minutes, and when cold, strain it to the cream, add the sugar, and when again heated pour the whole on the beaten eggs and stir till cold. Bake or boil it gently in a well

buttered mould or basin one hour. Let the custard stand five minutes before it is turned out. Serve with fruit syrup, etc., or fruit. The mixture may be made entirely of whites of eggs if more convenient.

Blanc-Mange.

394. Milk half a pint; cream half a pint; rind of half a lemon, or a little cinnamon, or one or two laurel leaves, or two or three bitter almonds, blanched and bruised; one or two ounces of sugar, and from half an ounce to an ounce of isinglass.

Boil the seasoning a few minutes in the milk, then remove them; but it is preferable to rub the lemon rind with pieces of lump sugar, and then add them to the milk; stir in the cream, isinglass, etc., and stir the whole over the fire till the isinglass is dissolved. Strain the blanc-mange into a bowl, stir it till nearly cold, then turn it into a mould and let it cool.

Isinglass and gelatine, though generally employed, are objectionable in Vegetarian cookery; their place, therefore, is frequently supplied by ground rice, arrowroot, carrageen moss, etc., but they are somewhat deficient in firmness, and the blanc-mange made with them is subject to become watery after standing some time.

Ground Rice Blanc-Mange.

395. Milk one pint; ground rice two ounces; sugar two ounces; lemon peel, cinnamon, or other seasoning.

Boil the milk, seasoning, etc., as above; mix the rice with a little cold milk, and rub it till quite smooth; add it to the boiling milk, and stir it while over the fire till quite thick; pour it into a mould, and when cold turn it out. Serve it with a little cream and sugar, or decorate it with sweet-meats.

Arrowroot and tapioca may be prepared in the same way. Or, two-thirds ground rice, and one-third arrowroot.

396. When carrageen moss is used, wash and steep from half to three quarters of an ounce in water for three minutes; take it out and shake the water from each piece, then boil the moss in a quart of milk, or milk and cream, until it attains the consistency

of warm jelly, or until sufficiently thick to retain the shape of the mould.* Strain it through a muslin bag and season as above. For jelly, boil the moss in water, strain without pressure, add the usual seasoning but no eggs (8, 44).

Bread and biscuit jelly, see 207.

397. Line a mould with any kind of preserves, or a mixture of them; soak sponge cake in hot custard, and put it over the preserve; then pour over it a thin blanc-mange to bind the whole together; when cold turn it out of the mould.

Fruit Creams, etc.

398. Gooseberries, apples, or rhubarb peeled and cut, two pints. Stew the fruit with a very little water (68), and pulp it through a sieve or colander; add about half a pound of sugar. Beat the yolks of two eggs with a quart of milk; heat it gently over a slow fire, till it begins to simmer; then stir it by degrees to the fruit, and serve it when cold. Cream, or milk and cream, may be used without eggs, and a little cinnamon, nutmeg, lemon peel, or other seasoning may be simmered with the milk when preferred. Some use a little perry or cider in stewing the fruit.

This preparation has received the appellation of gooseberry fool, etc.

399. Mash strawberries, raspberries, or other pulpy fruit gently, strew a little sugar over it, and let it drain through a sieve without pressure. Add sugar, cream, and a little milk if required. Beat the whole lightly in a bowl, and as the froth is formed lay it on the back of a sieve, pour the cream into glasses, and lay the froth on the top. Jam or jelly may be used instead of fresh fruit; six ounces to a pint of cream, adding also the juice of a lemon. Instead of fruit use two ounces of sweet almonds, blanched and beaten to a paste (57), a pint of cream, three ounces of sugar, and the juice of two lemons. Beat the whole and proceed as above.

400. Preserved fruit or jam passed through a sieve two ounces; currant jelly two ounces; powdered loaf sugar two ounces; the whites of two or three eggs. Beat the whole up

* Some recommend it to be boiled from two to four hours.

together for an hour, or until it will stand firmly. It may be eaten with moulded rice, etc.

401. Raspberries or other fruit one pound, or twelve ounces of their juice; sugar four to eight ounces; cream one pint. Boil the cream and dissolve the sugar in the juice of the fruit; mix them with the boiling cream; stir till the whole is rather thick, then pour it into glasses.

402. Apples six; whites of eggs six; sugar four ounces.

Stew the fruit, and pass it through a sieve; beat the whites to a froth, with the sugar; beat the fruit to a froth, and add it to the whites; then whisk the whole till it becomes pretty firm; heap it high on a dish, or lay it over stewed apples or trifle.

403. Raspberry jelly one-eighth of a pint; sugar one ounce and a half; cream half a pint nearly; isinglass three-eighths of an ounce. See 394.

Boil the isinglass in the cream; strain it into a basin, and let it remain till cool, but not set; mix the cream and juice together, and whisk the whole till it begins to stiffen; put it in moulds, and let it stand till the following day.

For moulds of a similar kind see Farinacea in Moulds, 209.

404. The juice of six oranges and a little of the rind; sugar four ounces; water half a pint; isinglass one ounce. Dissolve the isinglass in the water, adding also the juice, rind, and sugar; beat the whole till nearly firm and cool; put it into a mould, and turn it out next day. If lemons be substituted for the oranges, add more sugar.

405. The thin rind of two lemons, and the juice of three; isinglass one ounce; cold water one pint; loaf sugar twelve ounces; whites of eggs two.

Put the isinglass in the water, let it stand five minutes; then dissolve it over the fire, adding the sugar and the juice and rinds of the lemons, thinly pared; boil the whole two or three minutes, strain, and let it stand till nearly cold; add the whites of eggs well beaten, and whisk for about half an hour. Put it lightly into a glass dish, giving it a rough or rocky appearance.

406. Cream one pint; sugar to taste; lemon one.

Squeeze the juice of the lemon into a large basin; add the grated peel and the pounded sugar; mix them well, and pour the

cream to them by degrees; whisk the mixture till it becomes a thick froth; moisten a cloth and spread it in a sieve, the size you wish the cream or cake to be; pour in the mixture and let it stand twenty-four hours to drain; place it in a glass dish and garnish with preserve. Some add a glass of sherry to the lemon juice, etc.

407. Cream one pint; sugar to taste; isinglass one ounce and a half; white wine one glass; lemon rind one.

Dissolve the isinglass in the wine; rub the lemon rind upon the loaf sugar; set it over the fire, and when dissolved, remove it, and add the cold cream by degrees, stirring it well all the time. When it becomes rather stiff pour it into a mould.

COLOURING FOR JELLIES AND CREAMS.

408. *Red.*—Boil fifteen grains of cochineal in the finest powder, with a drachm and a half of cream of tartar, in half a pint of water, very slowly for half an hour; add whilst boiling a bit of alum, the size of a pea. Or, red beet sliced, and some liquor poured over.

White.—Almonds finely pounded with a little water or cream.

Yellow.—Yolks of eggs, or a little saffron steeped in the liquor, and squeezed.

Green.—Spinach or beet leaves pounded; express the juice, and simmer it in a tea-cup placed in a saucepan of water, till it sets; drain it gently on the back of a fine sieve. For jellies and creams mix it in a mortar with finely powdered sugar; for soups, dilute it with a little of the boiling stock, and stir it to the remainder. If pounded with plenty of sugar, and then boiled to candy height over a clear fire, and poured out into cakes, it may be stored in a tin box for future use.

PIES, TARTS, PASTIES, ETC.

409. Pies consist of fruit, roots, or other vegetables, partly or entirely surrounded with paste or bread crumbs, and baked. When entirely surrounded with paste, they are called Raised Pies (190).

For Fruit Pies a very thin strip of paste should be placed round the edge of the dish, fill it well with fruit, and moisten the edge of the paste, that the cover which is to be placed over the whole may adhere. In winter the dish should be warm, and the pie should be baked in a quick oven.

For Savoury Pies the sides, as well as the edges of the dish, should be lined with paste. The upper crust may vary from half an inch to an inch in thickness. If the paste be light, the thickness will be double when baked. For the mode of preparing paste for pies, see 186, etc.

A hole should be made in the centre of the top of the crust, or just within the border of pies and turnovers, that some of the steam may escape; this will prevent the juice or gravy from boiling over. A slip of writing paper rolled up, but not close, may be inserted to keep the hole open. Some persons insert a small cup in the pie to prevent the escape of the syrup, but it has no such effect, for the cup remains empty until the pie cools, after which there is no danger of the syrup escaping. As the pie cools, the syrup is forced into the cup, and is thus prevented from mixing with the contents of the pie, if this be thought desirable; the cup also will assist to support the cover.

A little water should be added to the contents of a savoury pie, but sugar or treacle only should be added to fruit, as water would destroy its flavour.

410. Pasties or Turnovers are formed by rolling out paste about one-third of an inch thick and six inches square. The fruit is then laid on one half the paste, the other half turned over it, and the edges wetted a little, and then united by being well pressed together. Bake them on tins or flat dishes.

Apples stewed as for sauce, rhubarb, scalded gooseberries, preserves, etc., may be used in filling them.

411. Puffs are a smaller kind of Turnover, and may be made triangular, semicircular, etc.

412 Fruit cakes are made thus: Procure some pieces of tin about a foot long, and six, nine, or more inches wide. Roll out puff paste about one-eighth of an inch thick, and large enough to cover the tin; put upon it a layer of sweet mince meat (417, etc)., about half an inch thick; cover it with paste about twice the

thickness of the bottom crust; trim the paste from the sides, and divide the top into small squares. Bake in a moderate oven, then sift loaf sugar over. Banbury and Eccles Cakes are thus made.

413. Tarts are formed by lining small tins with paste, filling them up with fruit, and then covering them with paste.

Raspberries and a few red currants, preserves, young gooseberries, etc., are generally used for tarts.

Tarts may also be made thus: roll out a good paste about a quarter of an inch thick, cut it into round cakes with a tin cutter, about three inches in diameter; then cut a piece out of half the number of cakes with a cutter about two inches in diameter, leaving a rim or border about half an inch broad; wet the edges of the cakes with as little water as possible, and lay the rims of paste on each cake; bake them in a moderately hot oven; lay them on a dish, and when quite cold, put preserved fruit in each tart.

414. Tartlets or "Tourtes" are made by rolling out puff or other paste a quarter of an inch thick, and lining small patty-pans or plates with it. Trim the edges, and then put in any kind of jam, marmalade, or preserved fruit. Ornament the border if there be one; string the fruit with paste (194) in various figures, and bake from six to ten minutes, in a quick oven. They should be very lightly browned.

415. Meringues are tarts covered with beaten white of egg and sugar, instead of paste, and baked in a moderate oven.

Mix eight ounces of finely sifted loaf sugar as lightly as possible with eight whites of eggs whisked to a strong froth, and flavour it with any essence you please. Line patty pans with puff paste, put in preserve, and cover it with the whites of eggs and sugar. Bake in a moderate oven. Or, half fill a pie dish with apples, rhubarb, or other fruit, which has been stewed with a little butter and sugar; cover the fruit while warm with the beaten whites and sugar, and sprinkle a little sugar over; place the dish in a slow oven, until a pale brown and stiff crust has been formed. If the oven be too hot, the meringue will be spoiled.

416. To prepare fruit for pies, see 285.

A quarter of a pound of sugar will generally be sufficient for a quart of fruit.

When pies are made of green gooseberries, apples, or rhubarb, it is advisable to clarify the sugar, that is, to boil it in a little water, but water should not be poured into the pie for this purpose.

The parings and cores of apples and pears may be stewed in a little water, and the strained liquor poured through a small funnel into the pie when it has been baked.

All pies made with summer fruit, cranberries, or winter preserves, will be improved by the addition of apples pared and sliced. When apples are mixed with jam, they should be sliced thin; and if syrup be wanted, a few slices should be boiled with a little of the jam in sugar and water.

Fruits preserved with sugar should be added after the crust has been baked; a cover may be baked for them.

A little sago or tapioca is a pleasant addition to rhubarb; it should be scattered between the fruit. Those who prefer much flavour in their fruit pies, may add lemon peel, cinnamon, nutmeg, marmalade, etc.

The above directions for fruit pies will be sufficient without a special recipe for each kind of fruit.

Sweet Mince-meat for Cakes and Pies.

417. Flour four ounces; butter two or three ounces; sugar six ounces; candied orange or lemon peel one ounce and a half; currants ten ounces; cinnamon a quarter of an ounce; allspice quarter of an ounce.

418. The crumbs of stale savoy or pound cake, and of sweet biscuits; add chopped apples, currants, candied peels; mixed spices; a little butter and sugar, juice and yellow rind of lemon, the latter rubbed upon sugar, or a little essence of lemon; moisten the whole with a little raspberry jam, or treacle.

419. Apples peeled, cored, and chopped fine, sixteen ounces; butter twelve ounces; lemon, orange, and citron peels mixed, twelve ounces; sugar six ounces; a small nutmeg and other spices. Currants sixteen ounces, and raisins chopped fine four ounces, may be added.

The butter in the above receipts should be beaten to a cream, or

dissolved at a gentle heat; mix all the ingredients well together, and press the mixture into a jar for future use; the apples, however, should not be added till the cakes are made.

Root, Herb, and other Savoury Pies.

420. Potatoes two pounds; onions two ounces; butter one ounce; water half a pint. Pare and cut the potatoes; put a layer of onions cut small between the layers of potatoes; season with pepper and salt; lay the butter at the top in small pieces; pour in the water; cover the whole with paste and bake.

The onions may be replaced by mushrooms cut small. Hard boiled eggs cut in slices or small pieces, may be distributed between the layers. Half an ounce of tapioca or sago is an improvement; these should be well washed and steeped in cold water before they are added; or they may be reduced to a jelly, and added to the pie when baked. When mushrooms are not used, the flavour may be improved by the addition of a little ketchup, which may either be added when the pie is made, or poured in with a little melted butter, etc., after the pie has been baked. Some add a little celery or powdered sage, sliced turnips, carrots, asparagus, or other vegetables.

These observations are equally applicable to any of the following pies.

421. Potatoes twenty-four ounces; turnips six ounces; onions two ounces; celery one ounce; tapioca one ounce; butter one ounce; eggs three; pepper and salt.

422. Potatoes, carrots, turnips, onions, celery, equal quantities of each. Cut the carrots and turnips into dice, and the onions and celery into small pieces; fry them in butter with a little flour, pepper and salt till tender, but not burnt; put them in a pie dish with the sliced potatoes, a little butter and flour, and a cupful of water; stew the whole in the oven till tender, then cover with a crust and bake.

423. Potatoes, carrots, turnips, mushrooms, peas, onions, lettuces, parsley, etc., may be stewed with a little butter, pepper and salt; bake a crust over a dish, with a cup in to support it, then add the stewed vegetables.

424. Turnips twenty-four ounces; onions four ounces; butter one ounce; water half a pint.

425. Carrots two pounds; butter two ounces; water quarter of a pint. The carrots should be well washed and brushed, then sliced, grated, or scraped, whilst raw; or they may be half boiled and sliced.

426. Mushrooms six ounces; butter one ounce; water half a pint; peas or potatoes pared and sliced, sixteen ounces; tapioca half an ounce; a little pepper and salt. The parings and stalks of the mushrooms may be stewed half an hour in water: strain and add the tapioca previously steeped, and when the pie has been baked pour in the gravy.

427. Vegetable marrow and celery in equal quantities, and one onion boiled; cut them small, season with pepper and salt, add a dessert-spoonful of tapioca steeped in a quarter of a pint of cold water, and one ounce of butter.

428. Scald some spinach, drain and squeeze it dry; chop and stew it in butter and cream, adding a little salt, sugar, and citron. Bake in puff paste.

Lettuce, spinach, beet, parsley, leeks in equal quantities; a small onion chopped, a leaf or two of sage, butter, pepper, and salt, eggs, groats, a little flour and water, milk or cream, bread crumbs, etc. A mixture of any of these may be made into a pie as above, more fluid being added when the mixture is not sufficiently moist.

Savoury Pies.

429. 1. Plain cold omelet cut in small pieces; tapioca washed and steeped in water ten or fifteen minutes. Butter a pie dish, spread a layer of tapioca on the bottom, then a layer of the omelet, and continue the layers of tapioca and omelet till the dish is nearly full; add also seasoning and a few small pieces of butter; cover the whole with a good crust and bake. A few sliced potatoes or mushrooms may be added. The above may also be baked in small dishes or in patty pans lined with puff paste, or in a raised crust.

430. 2. Common hasty pudding, mixed with onion, sage, and other herbs, a little butter, pepper, and salt. Line patty pans

with a short paste, fill them with the mixture. Bake them carefully, and before serving the patties, grate some cheese over them, and brown them before the fire. Instead of the hasty pudding, grated carrots and turnips or other vegetables may be used; adding a little butter, strong bran tea, and seasoning.

431. Eggs two, boiled hard and cut small; creed rice two table-spoonfuls; potatoes two, sliced; butter one ounce; arrowroot two spoonfuls made into jelly with half a pint of water; cream a spoonful or two; season with cayenne, or pepper and salt. Lay the sliced potatoes at the bottom of the dish, then the rice, eggs, etc. in layers.

432. Bread crumbs six ounces; chopped onions half an ounce; eggs four. Moisten the bread crumbs with four table-spoonfuls of cold water; add the eggs well beaten; pepper and salt; mix the ingredients well, tie them in a cloth and boil forty-five minutes. When cold, cut the pudding in small pieces; add two or three hard boiled eggs cut in pieces; one ounce of tapioca; and two ounces of butter in small pieces; cover the whole with a paste and bake. A few small mushrooms may be added.

433. Onion and sage fritters cut small; mushrooms; hard boiled eggs three; tapioca two ounces; butter one ounce.

See also the mixtures for Forcemeat Pudding, 356 to 358.

Cheese-cakes.

434. This term is used to designate shells of pastry filled with curd; or with rice, potatoes, and other mixtures and baked; but it is strictly applicable only when curd is used. For caseine or curd, see 15 and 50. Roll out some paste to the thickness of from a quarter to half an inch; line the pans or cases with it, leaving the middle a little thinner than the rest; trim the paste from the edges and notch them round; put in the curd and bake. The curd should be rubbed through a sieve with a little butter, and, when quite smooth, a few currants and sugar added. One or more yolks of eggs may be added, also cream, almonds, mace, nutmeg, etc.; or lemon or orange juice, the rind rubbed on loaf sugar, or candied lemon peel.

435. Ground rice four ounces; new milk one pint and a half; butter four ounces; sugar four ounces; eggs four to six

well beaten, and a grain or two of salt. Boil the rice in the milk fifteen minutes, and when removed from the fire and nearly cold, add the butter just melted, sugar, eggs, and salt. Line some large patty pans or saucers with thin paste, fill them three parts full, strew currants over the top or mix them in, and bake fifteen or twenty minutes in a gentle oven. Some boil a little cinnamon in the milk, others flavour with nutmeg, lemon rind, or almond flavour, etc.

436. Potatoes boiled or roasted and passed through a sieve, eight ounces; butter four ounces; sugar four ounces; eggs three; the rind of one lemon and half the juice. Dissolve the butter, or beat it to a cream; beat the eggs, and mix all the ingredients well together. A few currants may be added; or a piece of stale savoy or pound cake crumbled in. Bake in pans lined with paste as above.

437. Sweet almonds six ounces; bitter almonds half an ounce; Naples biscuits grated six ounces; butter melted four ounces; yolks of eggs six; whites three; juice and rind of a lemon, sugar to taste. Pound the almonds (57), beat the eggs, and mix well.

438. Naples biscuits grated two ounces; butter melted four ounces; eggs four; lemon juice and rind, and sugar to taste.

439. Apples grated eight ounces; butter melted four ounces; sugar four ounces; yolks of eggs four, and whites two; juice and rind of a lemon. Bread crumbs two table-spoonfuls, or Naples biscuits grated and beaten up with the other ingredients, make the cheese-cakes lighter (302).

440. Boiling cream one pint poured on a sliced roll. Let this stand two hours; add five or six well beaten eggs; butter melted four ounces; currants eight ounces, and a little mace.

441. Cocoa-nut washed, pared, and grated, six ounces; sugar four to six ounces; milk of the nut or water two or three table-spoonfuls; eggs five; half a lemon rind. Stew the cocoa-nut till tender, along with the sugar and milk, stirring it frequently; when rather cooled add the eggs well beaten and strained, and the lemon rind grated. Bake as above thirteen to fifteen minutes.

442. Boil one large carrot till tender, rub it through a sieve and mix well with two small table-spoonfuls of flour; one egg well beaten; a tea-spoonful of milk; sugar, currants, and seasoning according to taste. Line patty-pans with pastry, fill them with the mixture, and bake.

OMELETS, FRITTERS, PANCAKES, ETC.

443. There is little difference in these preparations, except as regards consistency, size, and the proportion of eggs employed.

Omelets consist principally of eggs, and may be either fried or baked. Fritters are composed of various ingredients, usually in the state of a stiff batter, and are made smaller and thicker than omelets. Pancakes are made of a thinner batter, and consequently they spread wider in the pan than fritters. All fried articles should be well drained from the fat by placing them on a drainer, or on blotting paper, and served as soon as ready.

Eggs should be well and lightly beaten, and a little salt added. When leeks, onions, eschalots, or other vegetables are used, they should be chopped small, and beaten with the eggs. When sweet herbs are used, parsley should form a part; tarragon, or any other vegetable which imparts a high flavour, should be used sparingly, and with this precaution any sort of pot herbs may be employed.

The butter or oil used for frying should be good and quite hot.

The batter should be as smooth as cream, and should be briskly beaten immediately before it is put in the pan. It is better when made some hours before it is used.

For mixing the ingredients, read the directions (117, etc.). Omelets may be used cold, as sandwiches, between two pieces of buttered bread, a little mustard being added.

Baked omelets when cold are excellent, if sliced and fried brown, and sauce poured over them; or they may be eaten cold with mint sauce and mashed potatoes.

OMELETS.

444. An omelet may be either plain, savoury, or sweet; it should be neither greasy, burnt, nor too much done. The fire should not be too hot, as the object is to heat the omelet well through, but not to brown it much. It should not be made too thin, and too much white of egg will render it hard.

When the batter has been well mixed, pour it into a pan containing boiling butter, stir it with a spoon till it begins to set, turn it up round the edges, and when it is of a light brown, it is sufficiently cooked. The omelet should not be turned, or it will be flattened and tough; fold one-half over the other, and lay it on a hot dish, the browned side outward. A salamander may be used for the upper side if it should be preferred brown. The pan in which an omelet is fried should be small to prevent the batter spreading too much: when the pan is not small enough, hold it on one side.

No sauce should be poured over the omelet.

To bake an omelet, melt a little butter in a dish, pour in the mixture, and bake it in a quick oven.

The following mixtures are intended for tolerably large omelets; when required smaller, diminish the number of eggs, etc.

Plain Omelets.

445. Eggs four; butter one to two ounces. To these may be added bread crumbs two to four ounces; or, bread crumbs one ounce, and mashed potatoes two ounces; or flour one ounce; or boiled rice four ounces.

To any of these forms add a little salt and pepper, or cayenne, or nutmeg and mace; and milk or cream sufficient to give the whole a proper consistency. Grated cheese and French beans boiled and cut small, of each two ounces; parsley a quarter of an ounce may be added to the beaten eggs and butter. The butter may be omitted in these and the following receipts if the omelet be thought too rich with it.

Savoury Omelets.

446. Eggs four; butter a quarter to half an ounce; flour one table-spoonful; cream or milk a tea-cupful; parsley shred

fine a dessert-spoonful; two middle-sized onions boiled and shred; cayenne and salt, a little of each. The whole should be of a light consistency, and may then be either fried, or baked in cups.

Instead of the onion add chives, beets, or spinach chopped small, one dessert-spoonful; sweet leeks, a small tea-spoonful; lemon thyme, one tea-spoonful. A very little tarragon may also be added.

447. Eggs four; butter one to two ounces; bread crumbs four table-spoonfuls; parsley and chives cut very fine, one table-spoonful of each; cream or milk as may be required; a little salt, pepper, cayenne, or nutmeg. Instead of chives, leeks or onions may be used.

448. Eggs four; butter one to two ounces; bread crumbs two ounces; flour and oatmeal half an ounce of each; potatoes one or two mashed; onions one to two ounces; sage half a tea-spoonful, lemon thyme and sweet marjoram mixed, half a tea-spoonful.

449. Eggs four; butter one ounce, or olive oil one table-spoonful; bread crumbs two table-spoonfuls; haricot beans boiled one pint; parsley half an ounce; milk half a tea-cupful; salt and pepper. Steep, boil, and then mash the beans with the milk; rub them through a sieve or fine colander, and add the other ingredients; pour the omelet into a buttered dish, and bake it in a moderately hot oven one hour. Serve with brown sauce.

450. Eggs four; butter two ounces; macaroni one ounce; bread crumbs four ounces; cream or new milk a quarter of a pint; chopped parsley a quarter of an ounce; sweet leeks one tea-spoonful; lemon thyme, marjoram, winter savoury, and sweet basil mixed, one tea-spoonful. Boil the macaroni till tender, and cut it in small pieces; boil the cream, pour it on the bread crumbs, and cover them with a plate. When cold, add the herbs, butter melted, eggs beaten, and the macaroni; mix them well, and season with mace, cayenne, and white pepper, salt, and spice powder. Pour the whole into a buttered dish or mould; steam it with paper over the top three quarters of an hour, or bake it in the oven. Serve with mushroom sauce or with brown sauce and currant jelly.

451. One egg; bread crumbs two or three ounces soaked in cream; a little parsley and a few chives chopped: pepper and salt.

Put the mixture into a well buttered shallow dish, and bake twenty minutes.

Sweet Omelets.

452. Eggs four; butter one to two ounces; sugar half to one ounce.

Fry the omelet carefully, and just before turning it upon the dish put two spoonfuls of preserve (raspberry or currant jelly, etc.) in the centre.

453. Eggs four; sifted sugar one ounce; flour a small table-spoonful; a little lemon peel shred fine; thin cream one pint. Pour the mixture into a buttered pan, and bake at a very moderate heat twenty minutes. Garnish with preserves.

454. Eggs four, flour one ounce; milk one pint. Thicken the milk over the fire; add the whisked eggs. Pour one half of the mixture into the frying pan, and when just set, put four table-spoonfuls of currant jelly in the centre of the batter; cover the jelly with the remaining half, and serve as soon as the upper portion is fixed. Instead of the currant jelly, a few heads of asparagus boiled and cut small, may be put between the two layers of batter.

FRITTERS.

Fruit Fritters.

455. Apples or rhubarb may be made into fritters, thus: Dress the fruit as for puddings (285), cut it into slices or convenient lengths, and put it into a basin with powdered sugar strewed over it, and let it remain thus several hours. Roll the portions of fruit in flour, or dip them in batter, described at 198. Fry them till of a light brown colour in boiling butter or oil; they should be quite dry and crisp.

456. Flour four ounces; warm cream half a pint; yolks of eggs two; sugar one table-spoonful; yeast one dessert-spoonful.

Form a batter with these and let it stand to rise one hour. Cut the fruit in slices or short lengths, put them separately into

boiling butter; strew sugar and nutmeg, if liked, over them, then cover them with the batter, and fry them till of a proper colour. If baking powder be substituted for the yeast, bake immediately (115 *b*.)

457. Chop the fruit small, add a few currants, and mix them with the batter of the last receipt; drop into boiling butter a sufficient quantity to form a fritter, and when sufficiently done on one side, turn it that both sides may be equally browned. Drain the butter from the fritters and sift sugar over them. These are frequently served with hot ale and sugar, but they are very good alone.

458. Eggs four yolks and two whites; flour four ounces; one large apple finely chopped, raisins stoned and shred three ounces; sugar one table-spoonful; a little yeast and half a cup of milk.

The batter for fritters should be rather thicker than for pancakes.

459. Eggs three or four; rice three ounces; flour one table-spoonful; butter one ounce; sugar two ounces; milk one pint; apples four ounces; currants three ounces; half a lemon rind. Simmer the rice in the milk till nearly tender, and till the mixture is thick and dry; add the sugar and butter, and when only just warm, mix the currants, apples chopped fine, flour, and eggs. Fry in small fritters from five to seven minutes, then sift white sugar over them.

Fritters made of Rice and other Grains.

460. The various grains may be made into fritters thus: Cree the grain in water or milk, and when nearly cold add eggs, well beaten, in the proportion of five eggs to six ounces of grain, weighed before being creed; season with pepper and salt, and fry in cakes about four inches in diameter and three quarters of an inch thick. Before being fried they may, if preferred, be dipped in beaten egg.

Serve with brown sauce, or crisped parsley and melted butter.

Instead of pepper and salt, currants may be added, or sugar may be sifted over them when removed from the pan. Cinnamon, lemon rind, etc., may be boiled with the rice. Neither melted

butter nor sauce of any kind should be poured over fritters, as it would render them too soft.

Cooked hominy eight ounces; flour one table-spoonful; mix; season with pepper and salt, and fry.

Fritters made of Roots, etc.

461. Potatoes, carrots, etc., may be half boiled, sliced, dipped in batter, and fried; or boil and mash them, add a little flour, or oatmeal, or bread crumbs; three or four eggs for every half-pound of roots, and two or three ounces of sugar; or pepper and salt if intended to be savoury. Beat the mixture well, and fry as previously directed.

The mixture for potato pudding at 359 may also be made into fritters.

Various other kinds of Fritters.

462. Toast lightly some slices of bread without crust, about half an inch thick; dip them in cream or new milk, and lay them on a dish. To three well beaten eggs add a little mace, grated lemon peel, sugar, and a quarter of a pint of cream, and pour a little upon each toast; then fry them, putting the wet side downwards; pour on the tops the remainder of the mixture; fry them till of a light brown, sift sugar over them, and serve them with sweet sauce.

Slices of plum cake, plum pudding, etc. may be fried as fritters.

463. Bread crumbs four ounces; boiling water, or milk half pint; eggs two to four; butter half an ounce.

Pour the boiling fluid upon the bread crumbs, and let them soak one hour; beat the mixture with a fork, removing all hard pieces; add the beaten eggs and butter; and if intended to be sweet, add from two to four ounces of sugar, and a little lemon rind and juice; also, if preferred, three ounces of currants, or four of chopped apples or other fruit, and fry.

If intended to be savoury, substitute for the sugar, etc., onions previously boiled in two or three waters and chopped small, two to four ounces; oatmeal one ounce; sage one tea-spoonful; lemon thyme and sweet marjoram half a tea-spoonful of each; a little

pepper and salt. Mix the whole well, adding more fluid when necessary; fry and serve up with brown sauce.

This mixture may also be baked whole as an omelet, in a buttered dish.

464. Bread crumbs six ounces; eggs four; parsley half an ounce.

465. Bread crumbs twelve ounces; chopped onions twelve ounces; chopped sage (previously boiled a little) two tea-spoonfuls; chopped parsley one tea-spoonful; eggs three; cream two table-spoonfuls. Fry the onions with the sage till rather brown, mix the whole, and divide into fritters.

466. Bread crumbs eight ounces; butter two or three ounces; eggs four to six; cream three or four table-spoonfuls; parsley half an ounce; leeks half an ounce; sweet marjoram, winter savoury and lemon thyme mixed, a quarter of an ounce; a little pepper and salt. Rub the butter into the bread crumbs, mix the whole well, and fry.

467. Mashed potatoes sixteen ounces; bread crumbs two ounces; eggs five; season with pepper and salt.

468. Rice coarsely ground four ounces; eggs four; parsley one tea-spoonful; onions finely chopped one tea-spoonful; pepper and salt. Boil the rice in about half a pint of water; let it cool, then add the other ingredients, and mix well. Fry and serve with brown sauce.

469. Flour one table spoonful; one egg; a little milk, pepper, salt, and cayenne. Mix them so as to form a thick batter; stir in four ounces of grated cheese just before it is dropped into the pan to be fried. Immediately before removing each fritter from the pan lay a thin slice of cheese over it and serve quite hot.

470. Bread sauce fried and garnished with fried parsley forms an excellent dish.

471. Flour eight ounces; butter two ounces, or olive oil three table-spoonfuls. Mix and work well together the flour and butter or oil; make it into a batter with warm water, and add two or three eggs, reserving the yolk for browning. Beat the batter well and drop it by spoonfuls, formed into balls, into boiling butter, and fry. Or, make the whole into a thin paste by

adding more flour, form it into balls, and spread it out with the remaining yolk of eggs, and fry. Pounded sugar may be sprinkled over them before frying.

Rissoles.

472. Potatoes one middle-size; one egg; small onion one; a little scalded parsley; fine bread crumbs two table-spoonfuls; pepper and salt mixed a quarter of a tea-spoonful; sweet marjoram and winter savoury mixed one tea-spoonful; butter a quarter of an ounce. Boil and finely bruise the potato; boil the egg till hard and the onion till soft. All the articles must be finely shred and well mixed, the butter being rubbed in with the rest. Form the mixture into eight small balls, roll them in egg and bread crumbs, and cook them with a little butter, either over the fire or in the oven, till they are of a light brown. Serve them with brown sauce to which a very little ketchup has been added. See 357.

PANCAKES.

473. The batter for pancakes should be of the consistency of cream, and should be beaten up well at the time it is used; but it is better to make it an hour or two before it is fried.

474. 1. Flour four ounces; eggs one to four; milk or cream a quarter to half a pint.

2. Ground rice four ounces; eggs one to four; milk or cream one pint; water a quarter of a pint.

3. Rice four ounces; cream half a pint; eggs four; butter four ounces.

A little salt and two tea-spoonfuls of sugar may be added. When the least number of eggs is used, add more flour and milk. To No. 1 may also be added from one to four ounces of butter; it may also be varied by leaving out two ounces of the flour and adding four ounces of creed rice. Cinnamon, nutmeg, lemon rind, ratifias, and macaroons are sometimes added. No. 1 may also be rendered savoury by adding a little pepper and salt, four ounces of boiled onion, a tea-spoonful of sage and one of parsley, and a little nutmeg. The quantity will be sufficient for two pancakes or one omelet. Small beer or snow may partly or wholly supply the place of eggs, (123). Mix one half of the milk or cream with

the flour, and beat the other half with the eggs, etc., then mix and beat the whole.

Or, mix according to 117 *b*.

In No. 2 mix the rice with the cold water and stir the mixture into the milk when it nearly boils, keep it on the fire till it thickens, but do not let it boil; put it into a basin to cool, stir in the butter, and when cold add the eggs, etc.

In No. 3 boil the rice to a jelly in a small quantity of water; when cold, mix it with the cream and eggs; add a little salt and nutmeg, then stir in the butter previously warmed, and as much flour as will render the batter of a proper consistency.

475. Melt a little butter in a frying pan; put in as much of the batter as will cover the bottom of the pan, and make the pancake about the thickness of a penny piece or the eighth of an inch; when the batter is nearly set, shake the pan round a little, and if the pancake will move freely, turn it over, adding a little more butter; when lightly browned, turn it again, and almost immediately slip it out of the pan upon a hot dish, placed over a pan or deep dish of hot water. Roll up each pancake as it is fried, and serve while hot with sugar and lemon juice. Some prefer butter and treacle, or boiled treacle.

French Pancakes.

476. Flour two ounces; eggs four; milk three quarters of a pint; the grated rind of a lemon, and one ounce of white sugar. Mix the flour, sugar, lemon peel, and a pinch of salt with a little of the milk; stir till quite smooth; add the yolks of the eggs well beaten, the remainder of the milk, and then the whites of the eggs beaten to a stiff froth; put a little clarified butter into six saucers, then the mixture, which bake in a moderately quick oven; when done, lay two together with preserved fruit between; sift sugar over and serve immediately.

SOUPS, SAUCES, PICKLES, ETC.

Soups.

477. The principal intention in the formation of soups is to extract, suspend, and combine in a liquid medium, the nutritive

principles and flavours of the various articles employed; and thus produce in a fluid or semi-fluid state, a stimulating, nutritious, and palatable compound. Soup, however, is insufficient to maintain health and strength without bread or other solid aliment, and being less digestible than the latter, it should always be taken in moderation.

478. *Utensils.*—The cover of the soup-pan, or pot-au-feu, should fit closely; stew-pans and saucepans should be filled with water after the soup, sauce, etc., have been removed, and these as well as all other vessels employed should be kept very clean and dry. As soups will ferment without the greatest attention, they should be warmed up every day, or every other day in cool weather, put into fresh scalded tureens, and kept in a cool place.

479. *Ingredients.*—The first requisite is pure, soft, or distilled water; hard water, however, is said to be preferable for green pea-soup, as the colour of the peas is better preserved in it (4).

Nearly all sorts of grain, roots, and vegetables may be used in making soups; some for the purpose of supplying nutritive matter, others for imparting flavour, etc.; and the art of composing a good, rich, palatable soup, consists in judiciously proportioning the several ingredients, taking care that the flavour of no one article overpowers that of the rest.

The principal articles employed are:—

1. *Grain, etc.*—Scotch barley, pearl-barley, groats, rice, peas, beans, lentils, whole or ground; also arrowroot, tous-les-mois, potato flour, sago, macaroni, vermicelli, semolina, Cagliari paste (21, etc.)

2. *Roots, etc.* — Potatoes, carrots, parsneps, turnips, beet, Jerusalem artichokes, horseradish, and one or two fruits, as cucumbers, vegetable marrow, tomatoes, etc. (39).

3. *Buds and Young Shoots.*—Onions, eschalots, garlic, leeks, asparagus, etc. (41).

4. *Leaves, Leaf-stalks, and Bracts.*—Cabbages, cauliflowers, lettuces, celery, and its seed, bay leaves (42).

5. *Herbs.*—Parsley, common thyme, lemon thyme, orange thyme, knotted marjoram, sage, mint, winter savory, sweet basil, tarragon, chervil, burnet, etc. The latter has the flavour of cucumber.

6. *Flowerless Plants.*—Mushrooms, morels, etc.

7. *Seasonings, etc.*—Salt, sugar, pepper, mustard, cayenne, pimento (allspice), cinnamon, ginger, nutmeg, cloves, mace, lemon-peel and juice, ketchup, etc.

8. *Animal Products.*—Milk, cream, butter, eggs and cheese,* (45).

To Prepare the Ingredients.

480. Every thing intended for soup should be fresh and good, and should be prepared with the greatest nicety, and with the utmost attention to cleanliness. Barley,† rice, sago, tapioca, macaroni, and vermicelli should be well washed and soaked in cold water, and then boiled in the soup. Sago and tapioca should be boiled about half an hour and strained previously to being added to the soup. About one ounce to each pint of water. These form a good stock to be added to each quart of soup. Grain previously boiled or creed should not be added till fifteen or twenty minutes before the soup is ready.

Peas, lentils, and haricot beans should be soaked for twelve hours or more in cold water before they are used, and as the former differ much in quality, such only should be employed as will become soft by boiling.

Count Rumford, however, says that peas should not be suffered to remain in the water over-night, as he found by repeated trials that they never boil soft if the water in which they are boiled is not boiling hot when they are put into it.

Potatoes, turnips, and Jerusalem artichokes should be washed, pared, and cut into small portions; parsneps, carrots, etc. washed, scraped, and cut; white roots should be put into cold water as they are cut to prevent them being discoloured by the air; onions, eschalots, and garlic should be cut small and used with great moderation.

* It is customary in Italy to serve grated cheese along with soup, that each person who chooses may mix a little with his soup.

† "Barley," says Count Rumford, "requires a great deal of boiling, but when it is properly managed, it thickens a vast quantity of water, and, as I suppose, prepares it for decomposition; it also gives the soup into which it enters as an ingredient a degree of richness which nothing else can give. Barley meal may be used instead of pearl barley and requires less boiling."

Sliced onions fried in butter with a little flour, sugar, salt, and pepper, till they are browned, and then rubbed through a sieve, are useful to heighten the colour and flavour of brown soups and sauces. Onions freed from their outer skin, dried gradually to a deep brown, in a very moderately heated oven, and flattened like Norfolk biffins, will keep for almost any length of time, and are very useful for the same purpose.

Onions, eschalots, or even a little garlic may be introduced in the most delicate dishes, if only so well blended with other flavours as not to be objectionable. A small piece of garlic crushed with a knife and stirred in is sufficient. It is useless to put several ingredients of the same character into either soups or sauces, as cloves and allspice, mace and nutmeg, marjoram, thyme, and savoury, etc.; soups are also more wholesome when not complicated by too great a variety of grain, roots, etc.

Nouilles (196), and forcemeat balls of various sorts, are also used in soups; some of them are called Passover Balls (527).

481. As butter loses its sweetness by boiling, it should be added after the soup has been sufficiently cooked, except when the vegetables are stewed in the butter.

Neither eggs nor cream should be added to soups or sauces till all the other ingredients have been well boiled, and the whole of a proper thickness; and after they have been added, the soup should be removed from the fire, carefully shaken or stirred in one direction till ready, but not allowed to boil again.

482. *Thickening.*—Fine, fresh, rice flour, which has been passed through a lawn sieve, is best for thickening soups generally, but arrowroot is preferable for white soups. Tous-les-mois, potato flour, or roux, may also be employed for the same purpose; from one to two ounces for a quart of soup. The flour, etc., used for thickening should be thoroughly blended with the sugar, salt, pounded spices, ketchup, etc. Add to it very gradually sufficient cold liquid to render it of the consistence of batter; when quite smooth stir it into the boiling soup, which should be simmered and stirred for ten minutes afterwards. Good bran tea boiled with the vegetables is useful for thickening.

483. *Seasoning.*—Sauces, being intended to give a relish to things otherwise insipid, admit of being more highly seasoned

than soups, which should always be mild and not too strongly flavoured.

About an ounce or an ounce and half of sugar to each gallon of soup is an improvement; the same proportion of salt may be used when few vegetables are employed, and two ounces when a large quantity of them is used. It is always safer to use too little than too much salt, pepper, and other seasonings, as a deficiency can be easily remedied, but an excess cannot be removed; yet as heat develops the flavour of pepper and most spices, it is advisable to put in the proper quantity at first; frequently tasting is, however, the only sure guide. Half a drachm of celery or cress seed finely powdered, or double the quantity if used whole, will impart almost as much flavour to two quarts of soup as two or three heads of the fresh vegetable.

Herb powder, or vegetable relish, browning, ketchup, flavoured vinegars, sweet herbs, and savoury spice are very convenient auxiliaries with which to finish soups. Spices and flavouring should not be added to soup till ten or fifteen minutes before it is removed from the fire, as heat dissipates the aroma.

Tomatoes are a great improvement to many kinds of soups.

A bunch of herbs, when spoken of for soups, consists of parsley, thyme, and green onions; when called *seasoning*, it is these with about three bay leaves, six cloves, a blade or two of mace, common pepper and salt.

Thickened soups require nearly twice as much seasoning as clear soups, the piquancy of spice being blunted by the flour and butter.

484. *Colouring.*—A piece of bread well toasted, but not burnt, put into the soup a short time before it is ready, will generally be sufficient. An ounce or two of moist sugar, the coarser the better, may be put into a small saucepan with a piece of butter the size of a walnut, and dissolved together; add a glass of ketchup, and stir it well. Fried or baked onions may be used for the same purpose, without either butter or ketchup. Also either brown or white roux, according to the colour of the soup.

General Directions for Making Broths for Clear Soups, or Foundations for Thickened Soups.

485. These should be prepared the evening before they are wanted.

Method 1.—Put the prepared vegetables and the cold soft water (60) into a stewing jar, or pot-au-feu, cover it closely and place it in a very moderately heated oven; or, put the whole in a stew-pan and raise the temperature gradually to the boiling point (say in thirty minutes);* skim the soup well, especially when it first begins to boil, or it cannot be rendered clear afterwards; a little salt thrown in will assist to bring the scum to the surface. As soon as the scum has been removed, put on the cover; keep the soup simmering gently but unceasingly, till all the ingredients which are soluble are quite tender or pulpy, which may require from one to six hours. When the vegetables are tough or fibrous, add a little soda to the water, especially if it be hard.

If intended as a foundation for thickened soup, pass the whole of the pulp, while hot, first through a colander, then through a fine sieve, add the thickening, seasoning, etc., and let the whole simmer ten minutes; but if intended to be used as a broth for clear soup, let it stand ten minutes after it has been removed from the fire, then without disturbing the sediment, pour the clear fluid into a basin, and after it has stood two hours, or when it is as transparent as it is likely to become, pour the clear fluid into a stew-pan. Unless skimmed and carefully managed, it may require the addition of two or three whites of eggs beaten up and boiled in the soup, to make it clear (13). If two kinds of soup are required, a portion may be poured off for clear soup, and the remainder boiled a little longer for thickened soup.

486. *Method* 2.—Dissolve the butter in a stew-pan, add a tea-spoonful of brown sugar, then the sliced vegetables, cover them closely, and stew them very slowly till soft and slightly browned, which may require from twenty-five to sixty minutes. Add the boiling water, bread, boiled peas, etc.; let the whole simmer, and skim it well; then add the seasoning, cover the pan closely, and continue the simmering gently for an hour and a half. Strain or decant as in No. 1.

* By this means the albumen, fibrine, caseine, etc., of the vegetables will be obtained in solution, but if the temperature be raised too rapidly, the fibres of the vegetables will be hardened, and the albumen coagulated. Rapid boiling carries off the volatile parts by evaporation.

When dried peas, lentils, barley, rice, or other grain are to be added, they should be previously well washed, soaked, and boiled, and put to the stewed vegetables with the boiling water. Barley requires long boiling. Sago and tapioca should be washed and soaked for two or three hours; dissolve them in a little water, and add them with the water to the fried vegetables; stir the whole well till ready.

487. *Method* 3.—Fry the sliced vegetables in the butter fifteen minutes, or till lightly browned on all sides. Put them into a soup-pan with the boiling water and seasoning, and allow them to simmer till tender, taking care to skim well. Strain or decant as in No. 1.

Ingredients for Broths.

488. To be prepared by any one of the above methods.

(*a.*) Turnips, carrots, onions, and other vegetables and seasoning herbs.

(*b.*) Carrots four; turnips two; celery two; onions four; toasted bread one slice, water four quarts. Stew and strain; or fry as above directed.

(*c.*) Turnip one; carrot one; celery one; onion four ounces; butter three ounces; peas one pint; a crust of bread; twenty-four berries of allspice; the same of black pepper, and two blades of mace. Herbs tied in a bag may be boiled in the broth when preferred.

(*d.*) Carrot one; celery one; onions four; butter eight ounces.

(*e.*) Potatoes six; onions six; carrots six; turnips four; celery three; butter four ounces; water four quarts, a brown toast, pepper and salt.

(*f.*) *Barley Broth.*—Scotch barley four ounces; sliced onions four ounces; salt two ounces; water five quarts. Wash and steep the barley, boil the whole an hour and a quarter.

(*g.*) *Scotch Broth.* — Scotch or pearl barley four ounces; groats two ounces; turnips two; carrots two; butter two ounces; bread crust eight ounces; water four quarts. Wash and steep the barley; boil it two hours; add the turnips and carrots, cut small, and when these are tender add pot-herbs, seasoning, etc.

Stock.

489. Stock is a term employed to denote that part of soup which becomes gelatinous when cold. For Vegetable Soups it is prepared from sago, tapioca, arrowroot, salep, and Irish moss.

These substances should be well washed, and soaked two or three hours separately, and then dissolved by boiling them in water. One ounce of any one of these, or of a combination of them, may be dissolved in a pint of water, except in the case of salep, one ounce of which will require nearly four pints of water.

Soups may be divided into—1. Clear Soups. 2. Opaque or Thickened Soups.

(1.) *Clear Soups.*

490. Make a good clear broth by any one of the methods (485, 486, or 487), then add a clear stock, or cut vegetables, macaroni, etc., which have been partially cooked.

A little fried parsley is frequently put into clear soups before serving them.

1. Cut the vegetables into shreds or into small dice. Then put them in cold water, boil them five minutes, and drain them on a sieve. Add them to two quarts of clear soup (488 *b.*); simmer the whole gently till the vegetables are tender, which may be the case in thirty or forty minutes. Season with salt and cayenne; four table-spoonfuls of mushroom ketchup may likewise be added.

2. Having cut the vegetables, wash them in cold water, then drain them on a sieve; when dry put them in a stew-pan with two ounces of butter, and a tea-spoonful of powdered sugar; set the pan on a very sharp fire for ten minutes, shaking the contents over occasionally till they are covered with a thin bright glaze, but take care that they are neither browned nor surrounded with a whitish liquid. Pour two quarts of clear broth over them, raise the soup to a boiling heat, and let it simmer till the vegetables are quite tender, especially the onions, which may require half an hour. Skim the soup well, and try whether it has been properly seasoned. There should be about half a pound of vegetables to two quarts of broth.

491. Additions to broths in order to form Clear Soups:—

(*a.*) One large turnip; the red part of a large carrot; onions three ounces; celery one stick.

(*b.*) Carrots, turnips, or turnip radishes; onions three; celery one.

(*c.*) Carrots and turnips six ounces; onions, leeks, and celery three ounces. Proceed according to 490, 2, using butter two ounces; sugar one tea-spoonful; broth three pints.

A few green peas, small pieces of broccoli, cauliflower, or Brussels sprouts, previously boiled, may be added.

A little tarragon and chervil, or the vinegars flavoured with these herbs, are a pleasant addition to this and other soups.

(*d.*) One carrot; one turnip; eighteen button onions.

(*e.*) Turnips or carrots or Jerusalem artichokes eight ounces. Artichokes will require only half as much boiling as either of the others.

(*f.*) Macaroni washed, steeped, cut in thin pieces, and partially cooked; or broken into the broth, four ounces to three pints. Boil till tender.

Vermicelli requires only half the time boiling which is necessary for macaroni.

(*g.*) Sago half an ounce; tapioca one ounce; boiled half an hour in two pints of water. Add this stock to broth (488 *b.*) simmer and skim well; strain the soup two or three times through book muslin, or a fine sieve; after the second straining add two ounces of butter, two table-spoonfuls of ketchup, and one of lemon pickle or lemon juice, or pickled mushrooms; a little cayenne and salt, and one table-spoonful of browning; skim and simmer till clear. The addition of forcemeat balls, or egg balls, etc. will render it an excellent substitute for mock-turtle soup.

Herbs tied in a muslin bag may be boiled in the soup when preferred.

(*h.*) Green peas boiled till rather tender and added to clear broth.

(*i.*) Mash well two ounces of rice, and boil it in three pints of broth till tender.

(*j.*) Drop very lightly and by degrees six ounces of semolina, or vermicelli, into three quarts of boiling soup, which should be stirred all the time. Skim and simmer ten or fifteen minutes.

The same quantity of vermicelli should be simmered for half an hour, or put four ounces of it in cold water, wash, steep, drain it quite dry, then stew it in the soup from ten to fifteen minutes.

(*k.*) To five pints of clear stock (489 or 491 *g.*) add, when it boils, a pound and a half of good baking apples, and stew them to a smooth pulp; press the whole through a strainer, add a small tea-spoonful of powdered ginger and a little pepper, and let the soup simmer two or three minutes; skim and serve it hot with a dish of boiled rice, the grains separate and dry, (106 *c.*)

(2.) *Thickened Soups.*

492. These may be either purée or smooth soups, or entire unstrained soups, and as to colour they may be either brown, green, or white, according to the ingredients used.

(*a.*) *Brown Soups.*

Proceed to make them by the General Directions, 485, etc.

(*a.*) Potatoes four to six; onions four to six; carrots four to six; turnips four to six; celery three heads; butter eight ounces; a brown toast; boiling water four quarts.

Fry the vegetables as in 487; then the toast and a head of celery cut small; add salt and pepper, stew the whole four hours, and strain.

(*b.*) Dried peas one pint and half; turnips one pound; carrots one pound; celery eight ounces; onions six ounces; butter four ounces; salt quarter of an ounce; toasted bread eight ounces; pepper half a tea-spoonful, and two table-spoonfuls of ketchup.

Stew as in 486; add boiling water to make three quarts altogether; strain and then simmer for a few minutes.

(*c.*) Split peas a pint and half; pearl barley half a pint; carrots two; one onion; turnips two; celery one; toasted bread eight ounces; water four quarts.

Wash and steep the peas and barley; boil them with a little salt and soda; add the vegetables and bread, and when quite soft pulp the whole through a colander. Add gradually a quart of boiling water, return the soup to the pan, season with salt and pepper, and boil ten minutes.

(*d.*) Large green peas one quart; butter two or three ounces; one middle-sized onion; a little mint; salt two tea-spoonfuls; sugar one tea-spoonful; pepper half a tea-spoonful; water half a pint.

Put the whole in a pan and set it on a slow fire, stir it occasionally until no more moisture remains at the bottom of the pan; add three table-spoonfuls of flour; stir the mixture rapidly and break the peas against the side of the pan with a wooden spoon; moisten with a quart of milk and a quart of water; simmer twenty minutes, or longer if the peas are old, then serve.

Fried bread in small dice is a good accompaniment. The bread should not be boiled, but the soup poured upon it.

Vegetable broth may be used instead of the milk and water. The peas may be passed through a hair-sieve by breaking and pressing them with the back of a spoon, by which means a purée soup is produced. Heat it and serve.

(*e.*) Cabbage lettuces four; coss lettuce one; sorrel one handful, tarragon and chervil, a little of each; cucumbers two or three small ones. Wash, dry, and cut the lettuces; pare and slice the cucumbers; butter four ounces. Stir the whole over a slow fire till no liquid remains; add two table-spoonfuls of flour, mix well, and then add gradually two quarts of broth (488 *a.*), or water only, and boil; when boiling add a pint of green peas, two tea-spoonfuls of sugar, and a little salt and pepper; when the peas are tender, serve.

(*f.*) Turnips three, cut in quarters; carrots three, cut small; Jerusalem artichokes four; celery one; onions three; sago one tea-cupful; barley half a tea-cupful; rice half a tea-cupful; peas two tea-cupfuls; arrowroot or potato-starch one tea-cupful; water five quarts. Boil the vegetables, peas, and barley to a pulp; strain, then add the rice, sago, potato flour, a bunch of herbs, pepper, and salt; boil half an hour, take out the herbs, then thicken with three tablespoonfuls of flour, and four ounces of butter worked well together. Add two table-spoonfuls of ketchup, two table-spoonfuls of lemon pickle, then boil the whole ten minutes.

(*g.*) *Crecy Soup.*—Red part of twelve carrots, one half of them

rasped, the other half cut small; turnips two; celery two; onions two; one leek; butter four ounces; sugar one table-spoonful.

Stew the cut vegetables with the butter and sugar as in 486. To these add two quarts of boiling water, or of broth (488 *a.*), and before the soup is removed from the fire add two table-spoonfuls of lemon pickle, or the juice of a lemon.

(*h.*) Carrots or parsneps two pounds; celery two heads; butter three ounces; red part of carrots six ounces; water four pints and a half; or substitute three ounces of rice or barley for one half of the carrots. Proceed as in 486.

(*i.*) Jerusalem artichokes or vegetable marrow two pounds; turnips one pound; onions two or three; celery one head; water two quarts; flour two table-spoonfuls; butter one ounce; pepper and salt. Boil or stew the vegetables till tender; add the flour and seasoning, let the soup simmer half an hour, and stir it frequently.

(*j.*) Carrots in very thin slices two pounds; onions sliced two; cloves two; a little thyme; sugar and salt two tea-spoonfuls of each, and a quarter of a tea-spoonful of pepper; water half a pint. Let the whole simmer gently for forty minutes; add three table-spoonfuls of flour, previously mixed with a little butter; then add two quarts of broth (488 *a.*); pass the whole through a sieve, and when the soup has been again heated, serve it.

(*k.*) Cucumbers five or six of a moderate size; cos lettuces six; bread crumbs six ounces; onions four ounces; parsley one ounce; butter four ounces. Pare and slice the cucumbers and onions; dress and cut the lettuces; add the parsley with a little seasoning, put the vegetables in a pan with the butter, and stew them gently for three quarters of an hour; then pour in two quarts of boiling water, add the bread crumbs, and let the soup simmer gently for two hours. If too thin, mix a tea-spoonful of flour with an ounce of butter, stir it well in, boil ten minutes longer, and add a table-spoonful of tarragon vinegar.

(*l.*) Cabbage lettuces two; spinach a handful; carrots six; turnips six; onions three or four; parsley one ounce; water two quarts. Wash and chop the vegetables small; cut the carrots,

turnips, and onions in small pieces; stew them in four ounces of butter; add the boiling water, and boil the soup gently with a little seasoning for two hours. A pint of young peas may be added; or grey peas which have been soaked and boiled; then stew another hour.

(*m.*) Count Rumford's proportions are, pearl barley four ounces; peas four ounces; potatoes twelve ounces; bread four ounces; salt one ounce; vinegar three ounces; water two quarts.

Boil the pearl barley, then add the peas, and continue the boiling for two hours; add the potatoes peeled, or first boiled to remove the peel, boil one hour and stir well. Add the vinegar and salt, and just before serving, pour the soup over the bread. The bread should be cut as fine or thin as possible, and if dry and hard so much the better.

The soup may be improved by mixing various kinds of roots, vegetables, and fine herbs.

(*n.*) Carrots, turnips, and onions two of each; one leek and one head of celery. Cut them thin and slanting; fry the onions till rather brown in four ounces of butter, add the other vegetables and fry them ten minutes longer, then add seven quarts of water, boil up and add split peas one pound and a half; simmer two or three hours, or until the whole has been reduced to a pulp; add two table-spoonfuls of salt, two of sugar, and one of dried mint; mix eight ounces of flour quite smooth with a pint of water, stir it well, pour in the soup, and boil half an hour.

(*o.*) One turnip; one carrot; three or four Jerusalem artichokes; six middle-sized onions; two heads of celery; one leek. All the vegetables together should weigh about two pounds; butter four ounces; water one quart.

Fry about one-half of the vegetables with a portion of the butter; cut the remaining half of the vegetables into small portions, and put them along with the fried vegetables to the water; raise the temperature to the boiling point, then let the whole simmer two hours, adding fresh boiling water as evaporation proceeds, so as to have about a quart of soup when the process is finished. Strain the soup, using a little pressure; if not thick enough, add a little flour and a little cream if at hand; also a

little pepper and salt, a tea-spoonful of sweet marjoram, three table-spoonfuls of ketchup, and the remaining butter; let the whole simmer a few minutes.

This soup is generally much esteemed.

The introductory remarks on thickening, flavouring, and colouring, should be well attended to, in order to succeed satisfactorily in making the foregoing soups, and in order to vary them as may be thought desirable. Water should be at a boiling heat when added to soup.

(*b.*) *Green Soups.*

493. (*a.*) Boil three pints of fully grown but sound green peas with half a tea-spoonful of soda for thirty minutes or more. When they are tender drain them and add them to two quarts of boiling stock (489), pale but good; stew them in it for half an hour, then pass the whole through a fine sieve; put the soup into a clean pan and bring it to the boiling point, adding salt if necessary, and a small tea-spoonful of powdered sugar. Clear off the scum and serve.

(*b.*) To the broth and stock (491 *g.*) without the browning, add a pint of green peas previously boiled with a little soda and a sprig of mint, and pulped through a sieve. Reserve a few to be put in whole, and if the soup be not of a sufficient consistency thicken it with a little flour, butter, and cream. Spinach greening (408) is sometimes added.

(*c.*) Green peas one quart; lettuces two; onions three; bread eight ounces; pea-shells without the stalks two quarts; turnips three; spinach or parsley one handful; salt one table-spoonful; water five quarts.

Proceed as at 485, pass the stewed vegetables through a colander or sieve; return the soup to the pan with a quart of boiling water; season with pepper and salt and boil the soup about ten minutes.

(*d.*) Cucumbers, three or four pared and sliced; the hearts of three or four lettuces shred small; two onions cut thin; a few sprigs of parsley, and if not objectionable, twelve or more leaves of mint roughly chopped. Stew these for nearly an hour over a gentle fire with three or four ounces of butter; add half a tea-

spoonful of salt, and a little white pepper or cayenne. When partially cooked drain them from the butter, put them to a stock made of a quart of fully grown green peas boiled, drained, pounded, and then stewed in five pints of the liquor in which they were boiled. Simmer the soup till all the butter has been cleared off, then add half or three quarters of a pint of young peas boiled as for eating.

(*e.*) Green beans one quart; spinach one handful; parsley one ounce; butter two ounces; vegetable broth two quarts; a little flour, pepper, and salt. Boil the beans, skin, and bruise them; add the water or broth, butter, flour and seasoning, and the vegetables previously boiled till soft. Stir the soup till it boils, and pass it through a sieve.

(*f.*) Green beans one quart; one leaf of garden sorrel; boil them in plenty of water and pulp them through a sieve; put them in a stew-pan with sufficient of the water in which they have been boiled; add one ounce of butter; half a spoonful of salt; a quarter of a spoonful of sugar; a quarter of a tea-spoonful of pepper; a little tarragon, and the quarter of a flower of the French marigold. Boil the soup twenty minutes and serve.

(*c.*) *White and other Soups.*

494. (*a.*) Pumpkins or vegetable marrow two pounds, cut in large dice; butter three or four ounces; salt and sugar two tea-spoonfuls of each; pepper a quarter of a tea-spoonful; water half a pint.

Stew gently for twenty minutes. When in pulp add two table-spoonfuls of flour and three pints of milk gradually, stirring the whole well during the mixing.

An onion sliced may be stewed with the marrow.

(*b.*) Almonds two ounces; new milk one pint and a half; cream half a pint; flour one table-spoonful; one onion; one head of celery; butter one ounce.

Blanch and chop the almonds small, boil them gently one hour along with the onion and the white part of the celery in one pint of the milk; remove the onion and celery; mix the flour and butter together; add half a pint of milk, a little cayenne, mace, and salt; stir the soup over the fire till it has boiled a few

minutes, add the cream, and as soon as the soup boils again remove and serve it.

(*c.*) Into any clear boiling soup, as 491 *g*, without browning, bread, or seasoning, drop vermicelli, macaroni, or rice previously steeped in cold water for two hours. Milk or cream may be added, if required as a white soup.

(*d.*) Or, after soaking and boiling the macaroni till tender, drain it, wash it in fresh water, lay it on a cloth, and cut it into short lengths, then add it to the strained soup; add also thickening and seasoning as may be required, and boil the whole ten minutes, then add the cream. Vermicelli may be treated in the same way without cutting it into lengths.

(*e.*) Wash and pare quickly some fresh artichokes, and to preserve their colour, throw each into spring water as soon as the skin is removed. Boil three pounds of them in water for ten minutes; remove them and slice them into three pints of boiling stock (489 or 491 *g*.); stew them fifteen or twenty minutes, press them with the soup through a fine sieve, and put the whole into a clean saucepan with a pint and half of more stock; add salt and cayenne; skim the soup well, and after it has simmered two or three minutes stir to it a pint of rich boiling cream or milk. Serve immediately.

(*f.*) Jerusalem artichokes two pounds; milk two quarts; butter one ounce; two yolks of eggs; cream five table spoonfuls.

Prepare the artichokes as above and boil them in water till soft; pass them through a sieve; put the pulp into a pan with the milk and butter; season with pepper and salt; stir the soup over the fire till it boils; then let it stew gently till it is of the consistency of peas soup. Put the beaten yolks of eggs and cream in a tureen, then pour in the boiling soup and stir it till well mixed. Serve immediately.

SAUCES.

495. Sauces are liquid, semi-liquid, or pulpy preparations for the purpose of rendering food more palatable.

Sauces may be arranged as follows:

1. Preserves, stewed fruits, or the juice of fruit.
2. Vinegars and their combinations.
3. Arrowroot, tapioca, etc. dissolved in water or milk.
4. Butter, flour, water, etc.

(1.) Preserves, Stewed Fruits, or the Juice of Fruits.

Preserves and the juice of fruit are frequently served with boiled rice, flour puddings, etc.

Apple Sauce.

496. Pare, divide, and core some apples; stew them in a very little water, and when sufficiently done, pulp them through a sieve.

A little sugar and lemon peel may be added.

Or, apples pared, divided, and cored one quart; sugar one ounce; butter half an ounce.

Add a table-spoonful of water to the apples; bake them in a basin covered with a plate, in a moderate oven for an hour, or till they are reduced to a pulp; beat the pulp till smooth; add the sugar and butter, or not, as may be preferred. A little lemon peel may be added to the apples and removed from them when they are reduced to a pulp.

This method is considered preferable to stewing the apples.

Raspberry Sauce.

497. Stew some raspberries with a little water till they are quite soft; mix a tea-spoonful of potato flour with a very little water; add it to the fruit, and when well mixed, strain the whole through a sieve; add a little sugar, cinnamon, and a glass of water, vinegar, or wine, and boil the mixture till it is clear.

Currant jelly, fresh cherries, or other fruit may be treated in the same way.

Red Currant Sauce.

498. Red currants half a pint; sugar three ounces in lumps.

If the currants are dusty wash them and drain them. Boil the sugar in one-third of a pint of water for five minutes; put in the currants and stew them ten minutes; strain off the juice through muslin or a fine sieve; heat it again and pour it while boiling to a small spoonful of arrowroot, or potato starch, previously mixed with a table-spoonful of cold water, and stir it well while mixing; finally, let the sauce boil for one minute that it may become transparent, then pour it over the pudding.

A few raspberries may be added two or three minutes after the currants have been put in. Syrups drained from plums, cherries, etc., prepared for drying (82), make excellent sauces for sweet puddings.

Boiled Treacle is a good accompaniment to yeast dumplings, porridge, etc.

(2.) Vinegars and their Combinations.

499. A mixture of sugar and verjuice or vinegar is frequently used as a sauce to light dumplings, and also to salad; for the latter purpose some add a little oil, mustard, etc.

Mint Sauce.

500. Mix two table-spoonfuls of mint, chopped very fine, with one large spoonful of sugar and a quarter of a pint of vinegar; or with the juice of a lemon and a little water.

Green mint may be chopped in any quantity during summer, and put into wide-mouthed bottles, which should then be filled with good vinegar and well corked.

Sugar can be added at any time when the sauce is required.

A sharp knife should be employed for chopping mint, and all other vegetables.

Flavoured Vinegars for Sauces, Soups, and Salad Mixtures.

501. Various fruits and herbs are used for this purpose, as, strawberries, raspberries, black currants, tarragon, burnet, sweet basil, mint, elder-flowers, eschalots, garlic, horseradish, cress seed, celery seed, etc.

Fill a wide-mouthed bottle with the fresh green leaves of any of the above herbs, gathered on a dry day before the time of flowering, and dried a little before the fire; cover the leaves with good vinegar; let them steep during fourteen days, then strain through a flannel jelly bag, pour the vinegar into small bottles, cork them well and keep them in a dry place.

If a strong essence is required put the strained liquor upon some more leaves, and after standing fourteen days strain as before.

Eschalots or garlic peeled and chopped two ounces; vinegar two pints. Proceed as above, frequently shaking the bottle.

Horseradish scraped three ounces; eschalots minced one ounce; cayenne one drachm; vinegar two pints. Steep and strain as above.

Cress seed, or celery seed, dried and pounded, half an ounce; vinegar two pints.

Burnet has nearly the flavour of cucumber; basil vinegar or tarragon vinegar is an agreeable addition to salad mixtures, sauces, and soups; but as the flavour of both these and garlic is very strong, each should be used very sparingly.

Vinegar of Mixed Herbs.

502. Lemon thyme, winter savory, sweet marjoram, sweet basil, half an ounce of each; lemon peel grated two drachms; eschalots two drachms; celery seed one drachm; vinegar one pint.

Eschalots, sweet savory, chives, and tarragon, of each three quarters of an ounce; dried mint leaves and balm, one dessert-spoonful of each.

Pound all in a mortar, put them in a stone or glass jar, or bottle, and pour over them a quart of vinegar, cover the whole closely for a fortnight exposed to the sun or in a warm place; strain and filter.

Fruit Vinegar.

503. Strawberries or raspberries twelve pounds; vinegar six pints; sugar equal to the weight of fluid obtained. The fruit must be ripe, fresh, well picked, of good flavour and gathered when dry. Put one-third of the fruit into large glass jars, or wide-necked bottles, and to each pound of fruit add a pint and a half of good vinegar; tie a thick paper over the jars, and let them stand three or four days; then pour off the vinegar and suspend the fruit in a jelly-bag or cloth till all the liquid has passed through *without pressure;* into the jars put another third of fresh fruit, pour the vinegar over it and again let it stand three days; then proceed in like manner with the remaining third of the fruit. Finally, drain off the liquor and pass it through the bag; weigh

it and mix with it an equal weight of highly refined sugar roughly powdered; or a pound and a quarter of sugar to a pint of the fluid; when the sugar is nearly dissolved stir the syrup over a very clear fire till it has boiled five minutes and skim it well; pour it into a clean pitcher or jug, cover it with a folded cloth, and let it stand till the following day; then put it into pint or half pint bottles; cork them lightly with good corks; and in four or five days press the corks well down, and store the bottles in a dry cool place.

When fruit is scarce, it may be gathered from day to day and added to the vinegar as obtained; it will not be injured by standing a day or two longer than the time mentioned, before it is drained from the fruit.

Enamelled stew-pans are the best vessels for boiling it in; or it may be simmered in stone jars set in a pan of boiling water; the former method, however, is to be preferred.

Another Method.

504. Crush the sugar and put one-fourth of it over the whole of the fruit, and let it stand two or three days; drain off the juice as above without pressure; heat the remaining sugar, put the juice in the pan, and when it begins to boil add the hot sugar. Boil, skim, and bottle as above. Or, boil the sugar to candy height, add the juice obtained as above, simmer the whole about two minutes, and remove the scum as it rises; the flavour of the fruit will thus be better preserved.

Raspberries and strawberries may be mixed together; black currants may also be thus made into vinegar.

Fruit-vinegars form a nice beverage by adding a spoonful or two to a glass of water; they also form excellent sauces for sweet light puddings.

Salad Sauce.

505. Eggs two; water or cream one table-spoonful; oil or dissolved butter two table-spoonfuls; salt or powdered lump sugar one tea-spoonful; mustard one tea-spoonful; vinegar three table-spoonfuls. To these may be added a tea-spoonful of tarragon vinegar, or basil vinegar, etc.; or a

table-spoonful of the chopped leaves. Boil the eggs twelve minutes, then put them in cold water for a few minutes; rub the yolks, which must be cold and hard, through a sieve with a wooden spoon, or pound them in a mortar; then mix them with the water or cream; add the oil, sugar, salt, and mustard; and, when these have been well mixed, add very gradually the vinegars, and rub the whole till well blended. Garnish the salad with the whites of eggs cut in pieces.

Mayonnaise Sauce.

506. Yolks of eggs two; a sprinkling of cayenne; salad oil one-third of a pint; water one table-spoonful; vinegar three table-spoonfuls; sugar and salt a little of each. Mix well together the yolks of eggs, cayenne, and one tea-spoonful of the oil; when quite smooth add another tea-spoonful of the oil, beat it well in, and thus continue to add the oil by tea-spoonfuls, beating after each addition, till the whole has been formed into a perfectly smooth mixture. In the meantime dissolve the sugar and salt in the vinegar, add this to the former mixture, and again beat the whole till smooth. A little tarragon vinegar will improve the flavour. Some persons prefer an extemporaneous mixture of oil, sugar, and vinegar.

(3.) Arrowroot, Tapioca, etc.

Arrowroot Sauce.

507. Arrowroot one table-spoonful; water or milk one pint; sugar four to six ounces; lemon juice or white wine. Mix the arrowroot with a little cold water, add it to the boiling fluid and sugar. If intended for dark sauce, substitute brown sugar and port wine; if for vegetables, season with pepper and salt.

Mock Cream for Rice, Fruit, etc.

508. Pour half a pint of boiling milk on a tea-spoonful of arrowroot, previously mixed with a small quantity of cold milk; stir the mixture well, and, when moderately warm, add the white of an egg well beaten; place the whole over the fire, and stir it till it nearly boils, then strain it for use.

Tapioca Sauce.

509. Tapioca one ounce; water one pint; loaf sugar four ounces; a little lemon peel. Simmer the tapioca in the water one or two hours or until it is dissolved and clear; add the sugar and seasoning, and pour the sauce over a baked or boiled pudding.

(4.) Butter, Flour, Water, Etc.

Butter Sauce or Melted Butter.

510. (*a.*) Put a large tea-spoonful of flour and a little salt in a basin, and mix with these very gradually till quite smooth a quarter of a pint of cold water; put them in a small clean sauce-pan and shake or stir them constantly over a clear fire till they have simmered two minutes; then add an ounce and a half of butter cut in small pieces; stir the sauce till the butter is quite dissolved; let it simmer one minute, then serve it quickly. It should be of the consistency of good cream.

(*b.*) Or, put two ounces of butter and a large tea-spoonful of flour into a saucepan; set it on the hob at a little distance from the fire, and leave it till it is of the consistency of thick cream; then mix the flour and butter together with a spoon, and pour to it one-third of a pint of boiling water, stirring it well together; set it over the fire, let it boil up, and immediately pour it into the sauce tureen.

(*c.*) Or, butter two ounces; flour two ounces; salt half a tea-spoonful; pepper one quarter of a tea-spoonful; cold water one pint. Arrowroot, potato-starch, etc., may be substituted for the flour. A spoonful or two of milk may supply the place of the same quantity of the water; to enrich the sauce add more butter. Two table-spoonfuls of ketchup added instead of the same quantity of milk, will make a good mushroom sauce. Butter, either from its bad quality or from boiling, sometimes runs to oil; when this is the case put a spoonful of cold water to it, and stir it with a wooden spoon, or pour it several times from the stew-pan to the saucepan and back; if this fails, add a little salt of tartar (kept in a well stopped bottle for the purpose) and stir or shake the whole well.

Sweet Sauce for Puddings.

511. To half a pint of butter sauce add two table-spoonfuls of vinegar and a little sugar; or four table-spoonfuls of raspberry vinegar; or, two table-spoonfuls of treacle and one of vinegar. Some add grated nutmeg or other condiments.

Cream Sauce.

512. Yolks of eggs two; juice of one lemon; salt a quarter of a tea-spoonful; white pepper a little; butter four ounces; stir the whole over the fire with a wooden spoon till the butter has gradually dissolved and become mixed with the eggs. Remove it from the fire occasionally when becoming too hot, or the eggs will curdle. Add half a pint of melted butter, and stir the whole over the fire.

Burnt Cream Sauce.

513. Stir in a small saucepan over the fire about two ounces of sugar till it is quite brown, then pour to it slowly a gill of thin cream, stirring it all the time. To be served with batter pudding or custard.

Parsley and Butter.

514. Wash some parsley very clean and pick it carefully leaf by leaf; put a tea-spoonful of salt in half a pint of boiling water, and boil the parsley about ten minutes; drain it on a sieve, *mince it quite fine*, and then bruise it to a pulp; put it into a sauce-boat and mix with it, by degrees, about half a pint of good melted butter, made as above, only it will require less flour, as the parsley will add to its thickness.

Chervil, basil, tarragon, burnet, cress, fennel, or fennel and parsley, may be added to butter sauce in the same way.

515. Butter three ounces; vinegar two table-spoonfuls; pepper and salt. Dissolve the butter in a pan, stir it over a gentle fire till it is of a dark brown colour; then pour to it the vinegar quite hot, and add the pepper and salt. This is used occasionally with poached eggs.

Brown Sauce.

516. (*a.*) Butter two ounces; flour one ounce. Melt the

butter in a frying-pan or saucepan, add the flour and stir the mixture till it is of a brown colour; add as much boiling water as will render it of the consistency of thin cream; season with pepper and salt. Add a little browning and ketchup.

(*b.*) Or, boil the flour and water with a little salt, then add it to the hot butter in the frying-pan, add also browning and ketchup, and let it simmer for five minutes, stirring it all the time.

Roux or Browning.

517. (*a.*) Put two ounces of powdered sugar into a stew-pan, which place over a slow fire; when it begins to dissolve stir it with a wooden spoon till it is becoming black, then set it in a moderate oven upon a trivet for about twenty minutes, pour a pint of cold water over it, and as soon as it is well dissolved bottle it for use. It will keep a few weeks.

(*b.*) Or, spread flour on a tin or dish, colour it without burning it in a gentle oven, or before the fire in a Dutch or American oven; turn it frequently that the whole may be equally browned. This blended with butter is a convenient thickening for soups and sauces when a deep colour is required.

(*c.*) Or, put either fresh or clarified butter into a saucepan over a slow fire; when the butter is dissolved stir in with a wooden spoon two ounces of brown flour; stir the whole constantly till it is quite smooth and of a yellowish light brown. If done too quickly over a hot fire it will become bitter. It may be kept a fortnight in summer, and longer in winter, in a covered earthen jar. A large table-spoonful will be sufficient for a quart of sauce.

(*d.*) Dissolve very *slowly* eight ounces of butter, skim it and allow the sediment to settle; then pour off the clear part into a stew-pan, and, while over a clear but gentle fire, dredge in very gradually nearly four ounces of well dried flour, and shake the pan often as the flour is added; stir the thickening constantly till it is of a clear light brown colour. Unless it be prepared very slowly and equally it will be spoiled. If intended for white soups or sauces, the thickening must not be allowed to become brown in the least degree.

Onion Sauce.

518. Peel some onions, put them in hot water, and boil them fifteen minutes, remove them into fresh hot water and boil them gently till they are quite tender; remove the external layer, squeeze the onions well between two trenchers or plates, then press them through a colander or chop them very fine; heat them in melted butter; or add them to half a pint of milk or cream, two ounces of butter, a tea-cupful of crumbled bread and a little salt and nutmeg, and boil the whole for a minute or two. Flour may be used instead of the bread.

Onion Purée Sauce.

519. Peel and cut six onions in slices; put them in a stew-pan with four ounces of butter, a tea-spoonful of salt, one of sugar, and half a tea-spoonful of pepper; simmer them over a moderate fire till quite pulpy, stirring them occasionally; add one table-spoonful of flour and a pint of milk, and boil the whole till it is a little thicker than melted butter, then pass it through a sieve, warm it again and serve it. Proceed in a similar way with Jerusalem artichokes, turnips, etc.

Celery Sauce.

520. Celery two roots; one small onion; flour one ounce; butter one ounce; cream quarter of a pint. Cut the celery and onions small and stew them in a pint of water till tender; stir in the flour, butter, and cream previously mixed together, till the butter is quite dissolved, and add a little pepper and salt; simmer the whole gently fifteen minutes, rub it through a tin strainer with a wooden spoon, return the sauce to the pan, and stir it till it boils.

Garlic Sauce.

521. Pound two cloves of garlic with a piece of fresh butter about the size of a nutmeg; rub the mixture through a sieve, and stir it into half a pint of melted butter; or make it with garlic vinegar.

White Sauce.

522. (*a.*) Butter two ounces; one carrot; small onions two, cut small; button mushrooms a handful; flour two table-spoonfuls; a little salt and cayenne; new milk one pint.

Stew the vegetables in the butter slowly for half an hour, or until the butter is nearly dried up; then stir in the flour and pour in the milk very gradually, shaking the pan well till the sauce is smooth. Boil it gently or let it simmer for half an hour, add the seasoning, strain, and reduce it, if not quite thick enough, or pour it while boiling to the yolks of two eggs.

(*b.*) Mix a dessert-spoonful of flour with from two to four ounces of butter; work them together with a knife until they form a smooth paste; boil a handful of small mushrooms in half a pint of water, with a little salt, mace, and cayenne, till the liquid is reduced to one half, then strain it off and add it to half a pint of cream; put these and the mixture of flour and butter in a saucepan, simmer the whole a few minutes, and just before serving add the juice of a small lemon.

Two or three tea-spoonfuls of parsley, boiled and finely shred, may be added to the sauce.

Rice Sauce.

523. Rice four ounces; milk one pint; one onion shred; white pepper-corns, and mace, and a little horseradish.

Wash the rice, add it and the onion and seasoning to the milk, and boil the whole gently till the rice is quite tender; remove the seasoning and rub the sauce through a sieve into a clean stew-pan; if too thick, add a little cream or milk.

To Thicken Sauces.

524. When sauces are thickened with the yolks of eggs, the latter should first be well beaten, then mixed with a spoonful of cold fluid, and one or two spoonfuls of the boiling sauce stirred very quickly to them; they should then be stirred briskly to the sauce while held over the fire, and well shaken for an instant afterwards, but not placed on the fire nor permitted to boil.

Bread Sauce.

525. Bread crumbs four ounces, or half a pint; water or milk half a pint; salt, a small salt-spoonful; mace, half as much;

cayenne a little, or twelve white pepper-corns; butter one ounce; one onion sliced.

Boil the onion and seasoning in the water or milk till the onion is quite soft; strain the hot fluid to the bread crumbs and cover them till cool; mash the whole and put it into a saucepan with the butter, then simmer it four or five minutes. A little cream may be added.

Egg Sauce.

526. Eggs three. Boil them till they are quite hard; cut them in small pieces, and mix them in good butter sauce; make it very hot, and add a little lemon juice.

Passover Balls for Soup.

527. Chop an onion very small, and stew it in half a pound of butter; pour it while hot upon eight spoonfuls of biscuit flour; mix all well together, add a little salt, grated nutmeg, lemon-rind and ginger, and six eggs. Put the balls into the soup when it boils, and boil them a quarter of an hour.

Mushroom Ketchup.

258. Take two gallons of large flap mushrooms, quite sound; break them into a deep earthen pan, and strew amongst them three quarters of a pound of salt, putting a little more at the top than between the layers. Let them stand one or two days and stir them gently once each day; drain off the liquor without pressing the mushrooms; strain and measure it; put it into a stew-pan and boil it quickly, with the seasoning, until reduced to about one half. For every quart allow half an ounce of whole black pepper, and a drachm of mace; or instead of the pepper a quarter of a tea-spoonful of good cayenne; pour the ketchup into a clean jug or jar, lay a folded cloth over it, and keep it in a cool place until the next day; pour it gently from the sediment, put it into small bottles, cork them well, cover the corks with cement, and keep the bottles in a cool dry place.

When the liquid has been strained from the mushrooms as above, they may be well squeezed, and what is obtained may be added to

the sediment of the ketchup; add also sufficient cloves, pepper, allspice, and ginger to flavour the liquid well; boil the whole, it will then be useful to mix with common thickened sauces, and soups.

To Dry Herbs.

529. Gather them just before they begin to flower on a fine dry day; cleanse them well and divide the branches; then dry them by the heat of a stove or in a Dutch oven before the fire, but be careful not to scorch them. To preserve all aromatic herbs, pick off the leaves as soon as they are dried; rub or pound them, pass them through a hair sieve and keep them in bottles closely corked.

Parsley, fennel, and chervil are ready for drying in May, June, and July; lemon and orange thyme in June and July; tarragon and burnet in June, July, and August; winter and summer savory in the latter part of July and August; sweet marjoram, the whole of July; basil from the middle of August to the middle of September; sage in August and September.

Mixed Herbs.

530. Pound together in a wedgewood mortar dried mint and sage, half an ounce of each; celery seed one drachm; cayenne a quarter of a drachm. Rub them through a fine sieve. This gives a savoury relish to peas soup and to water gruel. A drachm of allspice or black pepper may be pounded with the herbs instead of cayenne.

Or, dried parsley, sweet marjoram, winter savory, lemon thyme, of each two ounces; lemon peel cut very thin and dried, and sweet basil, of each one ounce. Some add bay leaves and celery seed a drachm of each. These may be dried and pounded together, then kept in closely stopped bottles.

Mushroom Powder.

531. Peel small, round, freshly gathered flap mushrooms; cut off the stems and remove the fur or gills; dry them in a Dutch oven before the fire till quite crisp and dry, but not scorched; pound them in a mortar, and sift the powder through a fine sieve. Keep the powder dry in well corked bottles.

To Crisp Parsley.

532. Pick and wash young curled paraley; dry it in a cloth; spread it on a sheet of clean paper in a Dutch oven before the fire, and turn it frequently till it is quite crisp.

It may also be nicely crisped by spreading it on a dish before the fire, putting small pieces of butter upon it, and turning it frequently with a fork.

Curry Powder.

533. When this condiment cannot be obtained ready prepared, the following mixture may be used as a substitute.

Coriander seed four ounces; turmeric four ounces; cummin seed two ounces; fœnugreek seed two ounces; cayenne half an ounce.

Dry the ingredients well in a cool oven, then pound them in a marble mortar, and pass the powder through a fine sieve. Keep the powder in well corked bottles in a dry place. Some persons add to the above ingredients black pepper, mustard, ginger, and other spices. Stir a tea-spoonful of curry powder into either brown or butter sauce.

To Curry Macaroni, Parsneps, Vegetable Marrow, Cauliflowers, Onions, or other Vegetables.

534. Boil the articles to be curried till nearly tender, and drain them well before they are put to the curry. Slice and chop an onion and fry it in butter till of a light brown colour; add a large tea-spoonful of curry powder and the same quantity of flour mixed well in water, and stir them to the fried onion; then let the whole simmer; the pan should be frequently shaken, but the mixture should not be stirred with a spoon. Mix in by degrees some melted butter, brown sauce, or arrowroot sauce; after which add the vegetable to be curried, and keep the pan well covered till the contents are ready to be served.

A little lemon juice and cream may be added just before the curry is served. Some cooks fry a little garlic with the onion; an apple in thin slices and cocoa nut may also be stewed with the other articles.

PICKLES.

535. 1. Pickles are various vegetables preserved in vinegar. They are eaten as a zest rather than as food, and are generally considered difficult of digestion. Good vinegar is absolutely necessary to success in pickling. The method of proceeding depends upon the nature of the vegetables; if of a hot nature, neither requiring spices, nor to be softened by heat, as capsicums, chili, nasturtiums, button-onions, radish-pods, horseradish, garlic, and eschalots, all that is requisite is to half fill a jar with good vinegar, then add the vegetables, and tie down with bladder or sheet gutta percha.

2. Heat the vinegar and spice and pour them hot over the vegetables to be pickled, which should be previously prepared by sprinkling them with salt or immersing them in brine; the vinegar must not be boiled, or it will lose strength by evaporation.

This method is applicable to gherkins, French beans, cabbages, broccoli, cauliflowers, onions, etc.

3. The third method is used when the vegetables require to be softened by heat, as walnuts, artichoke bottoms, beet root, and sometimes onions and cauliflowers.

In the two last methods, which include the common practice of pickling, it is necessary that the substance of the vegetables should be penetrated by the vinegar.

Since all vegetables abound with their peculiar juices, which, if mixed with the vinegar, would dilute it too much, it is necessary in the first place to throw salt upon the vegetables, which to a certain degree combines with and extracts their juices; or the vegetables may be boiled in a strong brine of common salt. This process may be facilitated, as in the case of walnuts, cucumbers, and others which are covered with a thick skin, by penetrating them with a rather strong needle, so that the action of the salt may be more immediate and penetrating. The loss of the natural juice will be supplied by the vinegar they will imbibe. The brine usually employed before pouring on the vinegar consists of six ounces of salt to one quart of water; or the solution may be made sufficiently strong to float an egg; it should be boiled five minutes and skimmed.

The pickle may consist of one quart of vinegar; ground black pepper one ounce; ground ginger half an ounce; mace half a drachm; cloves one drachm; mustard seed one ounce; and a little salt. Boil the whole fifteen minutes, or let it stand by the fire two or three days, and pour the clear liquor when cold on the articles to be pickled.

Stone jars, glass bottles, or unglazed earthenware are the best for making and keeping pickles in. Salt and vinegar dissolve the lead of glazed jars and of tinned saucepans; they also corrode copper and brass vessels, and render the pickles poisonous.

Pickles become soft by exposure to the air.

Pickled Walnuts.

536. These are ready for pickling in July, and should be so tender as to be easily penetrated by a needle. Prick them and let them soak in brine for a week; when they turn black put them on a sieve to drain for three or four hours, then dry them with a cloth. Put them in jars or bottles as above, pour the vinegar over them, taking care that they are well covered by it, then protect them well from the atmosphere and store them.

Gherkins, Radish Pods, and Kidney Beans.

537. Pour boiling brine over them and let them stand twelve hours; again boil the brine, pour it over them and cover them up; when cold repeat the operation till they turn green; then put them in a jar, pour over them the prepared vinegar, and cover them up.

Eschalots and Onions.

538. Onions one quart; vinegar one quart; salt a dessert-spoonful; whole white pepper one ounce. Boil the vinegar, salt, and pepper, and skim; put in the onions; simmer three or four minutes (eschalots two minutes) or till clear; put them in a jar and cover them up when cold.

Elder Pickle.

539. Large but young elder shoots taken about the middle of May (the middle stalks are the tenderest); remove the out-

ward skin, then lay them in salt and water one night. Dry each piece in a cloth, pour the prepared pickle over them in a stone jar; cover the jar closely, and keep it by the fire two hours or more, turning the jar frequently to keep the liquor hot. If not sufficiently green, strain off the liquor, and, when boiling hot, pour it over the shoots as before. Clusters of elder flowers before they open make a good pickle when prepared in the same manner.

Cauliflowers.

540. Cut the cauliflowers in small tufts; put them in boiling salt and water for one minute, drain them and put them in cold water; drain and dry them well, and pour the prepared pickle over them whilst it is hot.

Red Cabbage.

541. Cut the cabbages into quarters, taking out the stalks; shred them into a colander; salt them well, and let them remain twenty-four hours. Drain them till dry, put them in a jar, and pour over them the following pickle, which should be ready prepared. Vinegar one quart; pounded ginger half an ounce; ground black pepper one ounce; a little salt; a little horseradish cut in slices, and a few capsicums, or a little cayenne, according to taste. Put all these in a jar covered close, and let it stand on a trivet by the side of the fire for three days; when cold, strain off the liquor through a cloth, and pour it on the cabbage in jars. Cover the jars till cold, then tie them up. Sprigs of cauliflowers or slices of red beet previously salted, may be added.

Red Beet.

542. Boil the beet till nearly tender, previously well washed, but not cut or scraped (40); when cold, peel and cut it in slices half an inch thick; then put it in jars and pour over it hot vinegar, etc. Beet makes an excellent pickle, and it may at any time be prepared immediately by pouring a little vinegar over boiled or baked beet cut in thin slices.

Mushrooms.

543. (*a.*) Put button-mushrooms in milk and water, dry them with a bit of new flannel, put them in spring water with a little

salt, as you dry them; boil them four minutes; drain them and dry them between two cloths. Pour the boiled vinegar, etc., upon them when it is cold.

(*b.*) Or take freshly gathered large mushrooms, peel them; place a few of them in a pan with a little mace, pepper, salt, and mustard seeds; place the pan over a clear, brisk fire till the juice has been extracted from the mushrooms; then hang the pan at some distance above the fire that the watery particles of the juice may evaporate, and till the remaining juice has been reabsorbed; then remove them and put them in jars. Repeat the operation with a few mushrooms each time till the required quantity has been obtained. The jars should be only half filled with the mushrooms; boil some vinegar with a little mace and a few pepper corns, and pour it over the mushrooms in the jars till full. By this means the flavour of the mushrooms is preserved better than by pickling them in the ordinary way.

Lemon Pickle.

544. Six lemons, cut or scored into four parts, not quite through the rind; fill the incisions and cover the lemons with salt for a week; then take them out, clear them from the salt, put them into a jar with good vinegar, a very little saffron, mace, and one clove; cover them completely with the vinegar, put a plate or cover on the jar, and stew the lemons about three hours, or till tender, in a slow oven. Then remove them, add some fresh vinegar to the other vinegar, and boil some white pepper corns and cayenne in it. Cut the lemons into eight pieces, pour the vinegar over them, and tie them up. A little of the liquid is good for white sauce, etc.

Vinegar.

545. Bruise well some ripe gooseberries, and to every quart of the pulp put three quarts of cold boiled water; let it stand in an open vessel forty hours, then strain it through a coarse cloth, and again through a flannel bag. To each gallon of liquor put a pound of coarse brown sugar, stir the whole well and put it in a barrel, cover the bung-hole with strong paper pricked full of holes; let it stand nine months in the cask, then bottle it, and resin over the corks.

The colour of the vinegar may be varied by using red or green gooseberries, or a mixture of the two.

BEVERAGES.

546. Tea, coffee, and cocoa are in such general use that scarcely any directions are necessary for preparing them. SOYER recommends the following method.

Coffee.

(*a.*) Put two ounces of coffee in a saucepan or stew-pan; hold it over the fire till quite hot, and stir it all the time with a spoon, then pour a pint of boiling soft water upon it and cover it up closely for five minutes, strain it through a coffee bag, warm the fluid again, and serve it along with hot milk or cream. Sugar according to taste.

Tea may be made in the same way, viz., put the tea into the tea-pot, and let it stand either in the oven or in some warm place till the tea has been heated, then pour boiling water upon it.

Dr. DONOVAN recommends two and a half ounces of coffee to a quart of water. Pour one half of the water cold upon the coffee, bring it just to the boiling point, let it stand to settle a little, then pour the liquid off; add the remaining half of the water at a boiling heat to the grounds, boil for about three minutes, let it stand to settle a little, then pour off the clear part and add it to the other liquor. The first operation extracts the aroma of the coffee, the second the bitter principle.

Coffee and Egg.

(*b.*) The coffee should be recently roasted, not too brown, and ground immediately before being used. Mocha coffee should be preferred. Put four ounces of the coffee in a basin and break to it an egg, adding yolk, white, and shell. Mix it up with a spoon to the consistency of a thick batter; add to it a quart of warm, not boiling water; put it in a coffee pan and let it boil up and break three times; let it stand a few minutes, and it will be as clear as amber. The egg will render the coffee rich and smooth.

Café au Lait.

(*e.*) Put four ounces of coffee into a biggin and pour upon it three quarters of a pint of boiling water. The coffee for this preparation must be strong to excess. To half a pint of boiling milk add one quarter of the coffee just made, or a less quantity if desired weaker, and sweeten it with lump sugar. In the choice of coffee, prefer Mocha, next to this Bourbon and Mauritius, and lastly, West India coffee.

547. Coffee and tea, and, in a less degree, cocoa and chocolate, increase the activity of the vascular and nervous systems and thereby promote cheerfulness, animation, and nervous energy, but they not unfrequently produce congestion, headache, trembling, palpitation of the heart, restlessness, and inability to sleep. They also retard the assimilative process, and the waste or metamorphosis of the tissues; they consequently diminish the amount of urea and of the uric and phosphoric acids in the secretions, and a free use of them renders less solid food necessary. The latter results, however, are no proof of the real value of these beverages in the maintenance of a healthy condition of the system, which is promoted rather by the gradual but constant metamorphosis and reproduction of all the tissues; and the retarding of these processes retains semi-effete matters too long in the organism. These beverages, therefore, should be used cautiously by all who lead a sedentary life. They should be totally discarded, or used very sparingly by persons disposed to obesity or to diseases of the heart, and by those in whom the nervous system is too sensitive, or the circulation too much excited, and in certain skin diseases which become obstinate from defect of destructive absorption. Water has an opposite effect to tea and coffee; it increases rather than diminishes the interstitial metamorphosis of tissues (4).

Cocoa and chocolate contain much oil, and in composition have a close resemblance to milk; they unite in themselves the exhilarating properties of tea with the strengthening qualities of milk, and are therefore capable of sustaining bodily strength and nervous energy.*

* See *Medical Times*, April 27th, 1850; Professor LEHMANN *On the Use of Coffee as a Beverage*, etc.; JOHNSTON'S *Chemistry of Common Life*; Dr. T. K. CHAMBERS—*Brit. & Foreign Med. Chi. Rev.*, No. XXVIII, Oct., 1854.

Apple Beverage.

548. Cut four good apples, each into eight parts without removing the skin; put them into two quarts of boiling water and boil them till quite soft; pass the water through a sieve, pressing the apples gently against its side, but do not rub them through. Add sufficient honey to make it rather sweet, and drink it while lukewarm. Two apples thrown into rice water, or barley water, and boiled, form an excellent drink. Rice water is made by boiling gently a handful of rice in a quart of water till the rice becomes a pulp; pass it through a sieve, and press as much of the rice through as possible; sweeten it with honey.

Rhubarb, green gooseberries, red currants, raspberries, figs, French plums, raisins, and other fruits may be used as above and sweetened with treacle, sugar, or honey. Some add a little ginger, others bread well toasted. When ripe currants and raspberries are used, the water may be added cold. One pound of bruised fruit, half a pound of sugar, and a gallon of water. A little cream of tartar or citric acid is sometimes added.

Figs and Apple Beverage.

549. Two quarts of boiling water, six figs, two apples. Open the figs and cut the apples in six or eight pieces each; boil them twenty minutes, pour them into a basin to cool, and then pass the liquid and pulp through a sieve. The figs when drained may be eaten.

French Herb Broth.

550. Boil a quart of water, and when boiling, put in about forty leaves of sorrel, a cabbage lettuce, and ten sprigs of chervil having previously washed these vegetables; add a tea-spoonful of salt and half an ounce of fresh butter; cover the saucepan close, and let the whole simmer a few minutes; then pass the liquor through a sieve or colander, and drink it when cold. This is a favourite beverage in France, especially in spring.

Sweet Lait de Poule.

551. Put two yolks of eggs into a cup with two tea-spoonfuls of pounded sugar, a few drops of orange flower water, or the

eighth part of the rind of a fresh lemon grated; beat them well together for ten minutes, then pour boiling water over gradually, till the cup is nearly full, stir the whole well as the water is added. This is considered very good for a cold when taken very hot and in bed.

Ginger Beer.

552. White sugar twenty pounds; lemon or lime juice eighteen fluid ounces; honey one pound; bruised ginger twenty-two ounces; water eighteen gallons. Boil the ginger in three gallons of water during half an hour; add the sugar, juice, and honey, and the remainder of the water, and strain through a cloth. When cold, add the white of one egg and half a fluid ounce of essence of lemon; when the liquid has stood four days bottle it. This yields a superior beverage, and one which will keep several months.

OLEAGINOUS MIXTURES.

553. When oleaginous matter is considered desirable in larger proportions than the usual articles of food contain, the following form may be found useful. Olive oil half an ounce; mucilage of gum arabic one ounce; water one quart. Mix them well together, and add a little sugar and a few aromatic seeds if desirable. Or, beat the yolk of an egg with a little oil, mucilage, sugar, etc. Cream or butter may also be used with advantage. Or, the yolk of one egg; powdered gum arabic, olive oil, and sugar, one tea-spoonful of each. Beat the whole in water or cream, or a mixture of these. These may be regarded as substitutes for cod-liver oil.

VEGETARIAN DIETARY.

554. It was premised in the Introduction that the receipts in this work were not restricted to a purely fruit and farinaceous diet, but to one which may be regarded as intermediate and transitionary; and even this has been carried much beyond what the author recommends to be practised. The advocates of an animal or mixed diet will be much mistaken if they infer from these receipts that the table of a Vegetarian is habitually supplied with preparations which abound with butter and eggs; such dishes may be tolerated in moderation by persons who object or hesitate to make any very sudden change from a diet of which, during many years, the flesh of animals has formed a material part, but a little experience will prove such dishes to be both unnecessary and injurious. They pall the appetite, disturb digestion, and do not yield the enjoyment which the more consistent Vegetarian finds when living upon plainer food. Some converts, however, are apt to rush into the opposite extreme, and by suddenly adopting what they consider a pure and natural diet, regardless of the artificial condition in which they are placed, have injured their own health and damaged the cause of Vegetarianism.

In medio tutissimus ibis is a prudent maxim, and should not be lost sight of in our attempts to carry out what we feel assured is a natural law, but which may be impracticable in its entirety till the habits of civilized life and the customs of society, as regards food and drink, have undergone some change, and until nature, science, and art have united to supply from the vegetable world alone, all that is desirable as a diet for man in a cold and variable climate.

Our definitions of nature's laws and indications are frequently faulty, and a change of circumstances may render necessary a change in our expression of those laws and indications. Thus when we say that fruits and farinacea are the proper food of man, there is much implied which is not expressed, and the observation is no longer strictly true if man be not in a position for fulfilling such other laws of his economy as are in relation to his diet.

Climate, disease, unhealthy employments, and many other circumstances may render it desirable and perhaps necessary to resort to measures which in other conditions we should consider quite unnatural. An exclusively fruit and farinaceous diet may, therefore, be considered as one to which we should approximate, and only strictly adopt when physical conditions and careful experience will justify us.

Several Vegetarians have assured the author that they have suffered neither in health nor strength, but rather increased both, by a complete abstinence, from milk, butter and eggs; as a general rule, however, it is safer to admit them till we have more light on the subject.

It has been frequently asserted that a much larger quantity of Vegetarian food than of a mixed diet of flesh and vegetables is required to maintain health and vigour; the author's own experience for more than twenty-four years, and the testimony of other Vegetarians, have convinced him that this is an error, and chemistry and physiology, when fairly interrogated, afford ample proof that a well arranged Vegetarian diet is both more nutritive and more wholesome than an animal or mixed diet.

The brief experience of a few days may appear to negative this conclusion; because the change from a stimulating diet to one that is less so is frequently attended by a depression of the nervous system, and the temporary sensation of weakness or lassitude is apt to be mistaken for permanent loss of muscular power; a longer trial would expose the fallacy.

When Vegetarian habits have been prudently established, three meals a day are amply sufficient for all ordinary constitutions and employments, and these, in compliance with general custom in this country, are denominated Breakfast, Dinner, and Tea, or early Supper.

Breakfast.

555. This repast is usually very much relished by healthy persons, especially if no supper or late meal has been taken on the previous evening. The stomach having had a long rest, and the whole system having been soothed and refreshed by sleep, morning seems the most appropriate time for refreshment, as well

as for producing any desirable physiological effect by means of food, whether liquid or solid. Hence the importance of a judicious choice of articles of diet for the breakfast table, especially for invalids.

A selection may be made from the following list suitable to any constitution or condition.

Coffee; tea; cocoa; chocolate; milk cold, boiled, or made into gruel; water or other beverage.

Bread; cakes; dry toast; porridge; frumenty; rice; barley; cheese cakes; fruit pies, etc.

Gruel made with oatmeal, sago, tapioca, Indian meal, manna-croup, arrowroot, patent barley, revalenta, lentil meal, etc.

Fruits, fresh, or preserved, or dried, as raisins, figs, dates, etc.; sugar; treacle; honey; fruit jellies, or moulds; jams; marmalade, etc.; butter; cream; eggs; cheese.

The chief properties of the respective articles in this list have already been noticed.

Oatmeal porridge and oatmeal gruel, made with milk or milk and water, are excellent preparations for breakfast in cold weather, and are very nutritious.

Fruit of one kind or other is generally regarded as an agreeable and useful adjunct to the dietary of the morning meal, and is acceptable to most stomachs when eaten along with well made bread.

Dinner.

556. Health will be best maintained by a moderate variety of Vegetarian preparations made according to the instructions and receipts supplied in this and other works. A constant and exclusive adhesion to one or two simple articles of diet is not desirable, however much they may be relished; but too great a variety at any one time is equally objectionable. A little experience and careful observation will enable each person to determine what is best in his own case according to his constitution, condition of health, and employment.

Soups; well cooked vegetables; puddings; pies; omelets; fritters; eggs; cheese, etc. should be supplied in such variety and rotation as circumstances may require.

Inexperienced persons may at first make choice of a few dishes from the following list, but as tastes, habits, and constitutional peculiarities are so various, other receipts and combinations should be occasionally tried, till a sufficient number of such preparations as are most acceptable to each person or family, has been selected. They should then be arranged with some reference to the seasons of the year, and in such a manner that each may recur after certain intervals of time, or as preference may be given to them.

The Vegetarian finds by experience that plain well cooked dishes yield much greater satisfaction as regards health and real enjoyment, than those which are rich and complicated.

Soups, 491 *e*, *g*, and *k*; 492 *c*, *f*, *g*, *n*, *o*; 493 *a*, *b*; 494 *c*, *e*, *f*.

Vegetable marrow, 70 *a*, *b*, etc.

Potatoes, carrots, parsneps, turnips, Jerusalem artichokes, etc plainly cooked, or mashed, 215 to 233.

Cauliflowers, cabbages, etc., 240 to 262.

Mushrooms, salads, eggs, cheese, etc., 263 to 282.

Puddings, 270 *a*, 2; 296; 301; 304; 306; 307; 318; 322; 330; 335; 336; 337; 341; 343; 344; 354; 358; 359; 361; 367; 371; 372; 377; 380; 383; 388; 390; 392.

Fruit pies 416. Savoury pies 420 to 429.

Cheese cakes 434; 435. Omelets 445; 446.

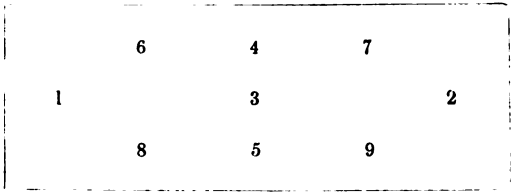
Fritters 457. Rissoles 472. Pancakes 474.

Attention and good taste should be exercised in supplying and arranging the various dishes according to the number of guests. The following bill of fare may be varied almost ad infinitum and a much simpler one will be preferred for family and general use.

FIRST COURSE.

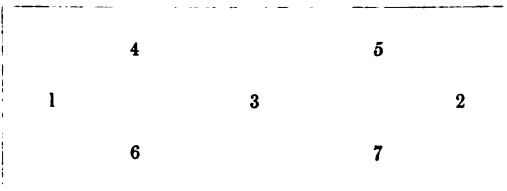
Soup. Fried vegetable marrow.

SECOND COURSE.



1 Omelet.
2 Fritters.
3 Savoury Pies.
4 Mushrooms.
5 Buttered eggs.
6 Potatoes.
7 Cauliflowers.
8 Peas.
9 Carrots and Turnips.

THIRD COURSE.



1 Baked Apple Pudding.
2 French Pancakes.
3 Gooseberry Tart.
4 Cheesecakes.
5 Custards.
6 Rice Mould.
7 Preserve Tarts.

FOURTH COURSE.

Cheese and celery or salad.

The third meal, when taken, should consist of a moderate supply of some of the articles recommended for breakfast.

WEIGHTS AND MEASURES.

In culinary preparations, scales, weights, and correct measures should be employed whenever practicable, but in the absence of one or other of these, the following relations and approximations may be found useful.

30 drops of a thin liquid will fill a middle-sized tea-spoon.
4 tea-spoonfuls are equal to one table-spoonful.
4 table-spoonfuls are equal to two fluid ounces, the eighth of a pint, or a wine-glassful.
4 wine-glassfuls are equal to half a pint, a tumbler glass, or large coffee cup.

A table-spoonful of salt, brown sugar, etc., will weigh	1 oz.
A middle-sized hen's egg	2 ,,
A middle-sized apple	3 ,,
A pint of bread crumbs	8 ,,
A pint of flour, sugar, dried peas, etc.	1 lb.
A quartern or half gallon	about 3½ ,,
A gallon	7 ,,
A peck or stone	14 ,,
A bushel or four pecks	56 ,,

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